

# Breaking the Paradigm of how Regulations Impact Community Design

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## INTRODUCTION

**S**PRAWL SEEMS TO BE AN INSIDIOUS FEATURE of communities throughout the world. However, if one looks closely, sprawl was given an inadvertent invitation by communities in the form of inappropriate land-use policies.

An interdisciplinary team at the Pennsylvania State University conducted a multi-year research project in smart growth called PennSCAPEs. PennSCAPEs (Pennsylvania Strategies, Codes, And People Environments) is both an education/empowerment and a land-use policy tool. PennSCAPEs goal is to simplify the structure and communication of innovative planning and design policies relating to neighbourhood development, including a dramatic improvement in the scope and quality of graphic illustrations. The project focuses on increasing understanding of how to create compact, walkable neighbourhoods, while also providing housing choices and easily accessible, useable open space. The project targets all those involved in community design and development issues, including students who are just learning about these issues.

## SPRAWL'S FAR-REACHING IMPACTS BEGIN AT THE LOCAL LEVEL

More dispersed suburban development patterns began appearing after World War Two. New homes, workplaces, shopping centres and schools were built at an increasing distance from existing community centres. In the mid-1950s, 80 percent of metropolitan growth was in suburban locations. (Feath, 2002) This trend has continued for the past 50 years. According to the American Farmland Trust, more than a million acres of US farmland are lost to development every year. The predominance of the automobile and single-use zoning regulations have produced land-use patterns that segregate and disperse uses, isolating each type from the others. Unfortunately, this land-consumptive pattern, often called 'sprawl', is becoming more global and is not unique to the United States of America.

While the negative environmental effects of sprawl, such as pollution and loss of natural resources, are well known, other negative impacts on human health are now being better understood. Sprawl development patterns have changed individual lifestyles. There is a growing recognition that the health of citizens in the United States of America is declining, and that their lifestyles are becoming more sedentary. (US Department of Health and Human Services, 1996) This is due in part to increasingly dispersed settlement patterns that necessitate dependence upon the

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automobile as the primary mode of travel to and from school, work, shopping and recreation. Between 1969 and 1989, the US population increased by 23 percent, however, the number of miles driven by that population increased by a dramatic 98 percent (Federal Highway Administration, 1989).

Those involved in planning and design recognise that there are more effective ways for communities to grow, but many land-use decisions are made at the local level, and unfortunately most of those decision makers are less acquainted with innovative techniques and policies. Recent case study research undertaken by the Hamer Center (2001) found that there is indeed a desire from both homebuyers and developers for a more compact town/village type of development, but that this type of 'innovative' development is often not permitted by land-use regulations in many local jurisdictions. A model design code that shows local municipalities the value of innovative development, and provides them with the tools to achieve this type of development, was identified as a critical need.

## REGULATORY FORMAT ISSUES

Regulations regarding land use refer to a dynamic and multi-faceted environment, and if these laws are to be effectively applied, those involved in the development process must be able to understand them. Therein lies the problem; the typical form of communication of these policies is inadequate for dealing with the multiplicity of physical (environment) and human (decision-making) issues. Dry, textual legalese fails to help people comprehend the policy's implications for their town's future character (Foster, 1999).

People receive and learn information in a variety of ways. The most engaging communication, which leads to the most effective comprehension, employs a diversity of forms: audio, verbal, visual (including text) and tactile. However, because humans are very visually oriented, information presented with a visual emphasis has an especially notable impact (Tufte, 1991). Dynamic computer technologies – namely multimedia – provide provocative opportunities for such desirable communication. Multimedia allows text, sketches, maps, photographs, sound and even video to be combined in a strongly visual and interactive manner (Johnson, 1995). The display and retrieval of information in a visual and non-linear format is akin to the way the human mind operates. The mind does not work in a linear fashion; it functions by association – organising common threads as those connections are seen or understood. Therefore, the multimedia communication of policies holds great promise for enabling the diversity of environmental issues, as well as the associated processes, to be better understood.

Not only can multimedia communication bring to life the multidimensional factors of land use through the use of photographs, video-clips, and so on, this format also facilitates connections between a land-use policy's diverse and interrelated issues. Regulations often compartmentalise information, but through hyperlinked cross references and animated graphics, disparate items can become more closely and easily connected. This can enhance the process of locating

information as well as assisting in user comprehension. Despite operating in the ‘information age’, land-use regulations have yet to evolve beyond their twentieth-century beginnings; multimedia communication provides an intriguing option in the way to engage and better inform the public about land-use decision-making.

## USE OF PENNSCAPES IN A COMMUNITY DESIGN STUDIO (WWW.PENNSCAPES.PSU.EDU)

In the past, community design studios introduced land-use regulations at the project ‘analysis’ stage, and then ignored how well students adhered to the requirements. This was usually because the site’s local regulations mandated sprawl, and the difficulty of showing students numerous model codes was not overcome. PennSCAPEs enabled a new approach to the community design studio this year.

PennSCAPEs’ accessibility as an interactive, web-based tool provides an environment with which this generation of students is quite comfortable. Thirty-three percent of the students surveyed responded; all had made some use of PennSCAPEs during the class, with 42 percent saying they referred to it often. A majority (75 percent) said that they found PennSCAPEs to be “relatively or very easy” to use, with several students offering concluding comments such as, PennSCAPEs “is very effective and helpful”, and “It was an extremely useful tool”.

PennSCAPEs presents information in an educational mode, as well as via sample land-use policies. Students were instructed to review the strategy and benefit components (the animated-educational tools) as background to help inform their designs. They were then required to treat the sample regulations as local municipal law.

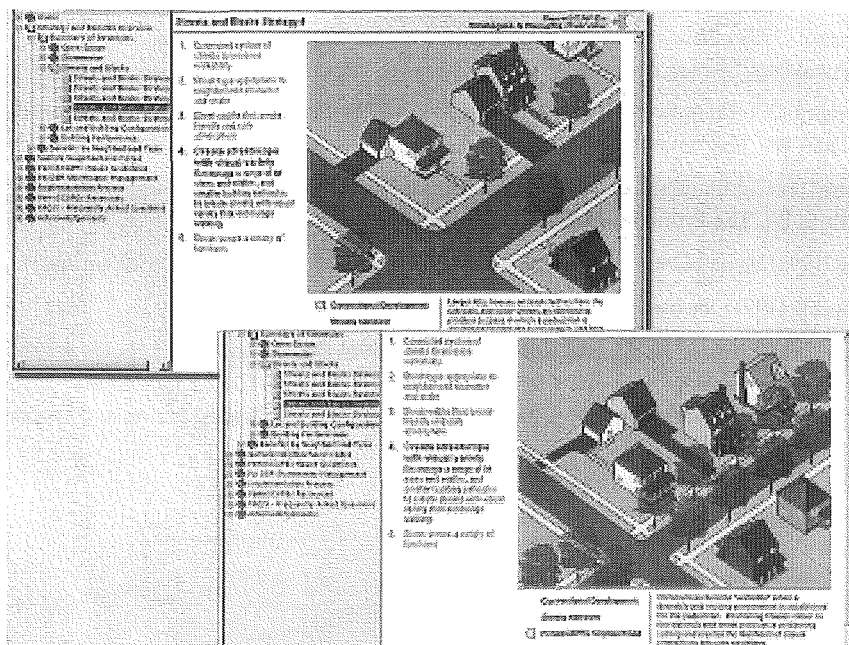


Figure 1: Streets and Blocks Strategy #4 emphasises the role of street width and building setbacks in determining an inviting, walkable street character. The user makes choices that graphically morph from the conventional to the PennSCAPEs approach.

Of the two components, it appears that the sample policies were referenced the most. Sixty-six percent said they “frequently” used PennSCAPEs to understand better dimensional information (lot sizes, street widths and so on). These dimensional aspects are key parts of the sample policies.

A majority (83 percent) used PennSCAPEs at least a few times to gain a better understanding about community design fundamentals by viewing the animated multimedia ‘strategies’ sections. Nearly half (49 percent) found PennSCAPEs animations to be quite helpful in better understanding community design concepts.

## CONCLUSION

In considering challenges that lie ahead for design of our communities, fundamental changes will be necessary in land-use policies. These changes will require participation by landscape architects to assist communities in the elimination of regulatory barriers to sound land development. If our profession desires to be at the forefront of addressing environmental and human health issues in this century, landscape architects must be both knowledgeable about, and willing to engage, in the local regulatory arena. PennSCAPEs provides a unique opportunity to engage this generation of landscape architects in these key issues in a studio-learning setting.

## REFERENCES

- Feath, Jim (2002) *The Polarization of the American Metropolis: Residential Segregation and the Evolution of Racial Isolation*, Masters Thesis in Landscape Architecture, University Park, PA: The Pennsylvania State University.
- Federal Highway Administration (1989) *Selected Highway Statistics and Charts*.
- Foster, Kelleann and Johnson, Tim (2002) Creating Multimedia Reports with Impact, *Landscape Architecture Magazine*, 92:11, pp 54–61.
- Foster, Kelleann (1999) Planning Law Communication Goes Multimedia, *AURISA Annual Conference Proceedings*, Sydney, Australia.
- Hamer Center for Community Design Assistance (2001) *Circleville Farm Study: Summary Report*, University Park, PA: The Pennsylvania State University.
- Hamer Center for Community Design Assistance (2003) *PennSCAPEs* ([www.pennscapes.psu.edu](http://www.pennscapes.psu.edu)), University Park, PA, The Pennsylvania State University.
- Johnson, TP (1995) Myriad Options in Multimedia, *Landscape Architecture Magazine*, 85:9, pp 26–31.
- Tufte, Edward R (1991) *Envisioning Information*, Cheshire, CT: Graphics Press.
- United States Department of Health and Human Services (1996) *Physical Activity and Health: A report of the surgeon general*, Washington: Centers for Disease Control, National Center for Chronic Disease Prevention and Health Promotion, The President’s Council on Physical Fitness and Sports.