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Subdivision Regulations

Practices & Attitudes

A Survey of Public Officials and Developers in the Nation's Fastest Growing Single Family Housing Markets

Introduction

Urban development is dependent on sets of standards and regulations that dictate the shape and form of our built environment. Whether it is street layout and width, or the placement and configuration of utilities and infrastructure, place making can rarely escape the framework imposed by codes and design regulations. Although there is a general agreement that some form of control is necessary to warrant the adequacy of public services and to ensure guided growth, little agreement exists about the degree of restriction and the type of requirements placed on development. The private sector, professional consultants, as well as some public officials, are often apprehensive about the extent and affect of development related regulations imposed on their practices. They see some regulations as costly, inconsistent, and superfluous. They often blame regulations as a barrier to housing affordability and innovative design solutions.

Numerous federal commissions, state committees and private studies agree with these assertions, indicating that development regulations often discourage efficiency, are costly, and increase housing costs. As recently as 2002, a Congressional Millennial Housing Commission stated that "the nation faces a widening gap between the demand for affordable housing and the supply of it. The causes are varied—rising housing production costs in relation to family incomes, inadequate public subsidies, restrictive zoning practices, adoption of local regulations that discourage housing development, and loss of units from the supply of federally subsidized housing." (Millennial Housing Commission 2002, 9) Similarly a study by the Pioneer Institute for Public Policy Research and the Rappaport Institute for Greater Boston concludes that in Massachusetts: "Excessive regulation by agencies and boards at both the state and local level has gotten to the point of frustrating the development of housing in Massachusetts. Both level of government need to prune back the sprawling regulations and improve coordination among the different regulatory player." (Euchner 2003, 42) Another statement by the Advisory Commission on Regulatory Barriers to Affordable Housing declares that: "The cost of housing is being driven up by in increasingly expensive and time-consuming permit approval process, by exclusionary zoning, and by well intentioned laws aimed at protecting the environment and other features of modern-day life." (in Luger, and Temki, 2000, xiii)

Such debates are not new. As early as 1910, when addressing the Second National Conference on City Planning and the Problem of Congestion in New York, Frederick Law Olmsted Jr. stated: "There has been a decided tendency on the part of official planners to insist with quite needless and undesirable rigidity upon certain fixed standards

of width and arrangement in regard to purely local streets, leading inevitably in many cases to the formation of blocks and lots of a size and shape ill adapted to the local uses to which they need to be put. Another instance is that of fixing a minimum width of street and minimum requirements as to the cross section and construction there of which make the cost needlessly high for purely local streets, and thus inflicts a wholly needless and wasteful burden of annual cost upon the people." (Proceedings of 1910, 22-23) Another author, writing in 1934, asserted that "compliance with minimum standards with respect to street grading and the installation of water mains and sanitary sewers often may increase the total home cost as much as 20 percent." (in Seidel, 1978, 119)

Calls for regulation overhauls are often viewed reluctantly by planning authorities. As early as 1954 the American Society of Planning Officials warned planners about the home builders "campaign to break municipal subdivision regulations and controls" and their intent to pressure municipalities "to abandon or weaken subdivision control ordinances, financial regulations and control." (American Society of Planning Officials 1954) Traditionally planning authorities have been the avid promoters and protectors of regulations. From their perspective, regulations, particularly subdivision controls, are a central instrument in planning practice and the primary mechanism in ensuring minimum quality in the provision of the residential built environment. As suggested by the US Housing and Home Finance Agency in 1952: "The regulation of land subdivision for residential and other uses is widely accepted as a function of municipal and county government in the United States. It has become widely recognized as a method of insuring sound community growth and the safeguarding of the interests of the homeowner, the subdivider, and the local government." (Manual of Suggested Land Subdivision regulations, 1952, 1)

Although contentions regarding development regulation are widely expressed, few studies have attempted to further understand and gage these contentions with regard to the design and planning of residential development. As indicated earlier, most studies, such as those by Field and Rivkin (1975), Seidel (1978), Rosen and Katz (1981), Fischel (1990), Luger, and Temki (2000), and Pendall (2000) address the impacts of various land-use regulations on housing costs, affordability and exclusions. Other studies, such as those by Wheaton and Schussheim (1955), Urban Land Institute (1958), Real Estate Research Corporation (1974), Duncan (1989), Gordon and Richardson (1997); Sierra Club (1998) and Burchell et al. (1998, 2000), efforts to calculate and compare development costs related to physical neighborhood patterns. Few studies have concentrated on the regulations themselves, particularly those that shape the physical aspects of development -- such as subdivision controls.

Scope and Purpose

This study attempts to further understand the universe of regulations as manifested in the practices and attitudes of subdivision controls. By obtaining an in-depth view of existing regulatory procedures in those regions of the country experiencing rapid urbanization, issues can be identified that might otherwise be unattainable through reading the regulations themselves. What are the issues and contentions with regard to subdivision

controls and regulations? What are the attitudes and perceptions of public officials and developers representing the housing industry? What are the most common mechanisms of the enactment of these regulations, and how are they perceived, challenged and implemented?

Another important intention of this study is to gain an understanding of changing practices, trends and attitudes over the last decades. The study therefore utilizes and compares findings from a similar research completed in 1976 by Stephen Seidel and the Center for Urban Policy Research in Rutgers, NJ.

Stephen Seidel's survey of regulations and housing costs (published 1978) is based on interviews with key informants involved in developing local regulations, as well as information provided by home builders. It specifically looked at seven types of government regulations on housing:

- Building codes
- Energy Conservation Regulations
- Subdivision Regulations
- Zoning
- Growth Controls
- Environmental Regulations
- Settlement and Financing Regulations

The subdivision regulation section is one of the most comprehensive analyses of subdivision requirements and their effect on housing costs. It showed that by 1976, (the date of the study), subdivision regulations had become more complex, and in the eyes of developers, much more onerous. While originally, simple subdivision regulations were put into place to transform undeveloped land into parcels suitable for development, by the time of the survey in 1976, subdivision requirements had begun to include detailed stipulations such as on-site and off-site improvements developers had to provide. According to Seidel, these improvement standards required many developers to offer amenities that were often unnecessary and costly, and, in doing so reduced the supply of affordable housing in newly constructed subdivisions. As stated by Seidel: "Far and away the area of regulation cited as containing the most unnecessary costs was subdivision controls. Over 72 percent of the respondents estimated that unnecessary aspect of subdivision controls were responsible for more than 5 percent of the total price of the unit." (Seidel, 1978, 37)

Survey Design

Similar to Seidel's 1976 work, this study is composed of a two related efforts:

- A nationwide survey of public officials in jurisdictions which are experiencing rapid development growth in single family housing
- A nationwide survey of developers who are developing in these areas

In the summer of 2002, 500 developers and 500 public officials were mailed a written questionnaire. The sample selection was based on the U.S. Census Manufacturing and

Construction Division (MCD) building permits data of four years (1996-2000), and divided according to the MCD four regions: Northeast, Midwest, South and West. (For detailed description of the case selection, and the sampling steps as well as various data on the jurisdiction selected see Appendix A). The response rate was 32 percent for the public officials and 17 percent for the developers with an almost even distribution between the various regions.

Organization

The first and second sections of the study provides an overview based on the current study as well as the data from 1976, demonstrating the professed burden of government regulations on the housing industry. Section three introduces the concept of subdivision controls and regulations from a historical perspective and describes general subdivision practices as indicated by the public officials. Section four covers requirements and perceptions about physical improvements and site development standards. The next section surveys various changes to requirements as well as applications for relief. It also presents various practices and attitudes regarding alternative subdivision developments such as Planned Unit Developments and private, common interest communities, and the impacts of growth and environmental control measures.

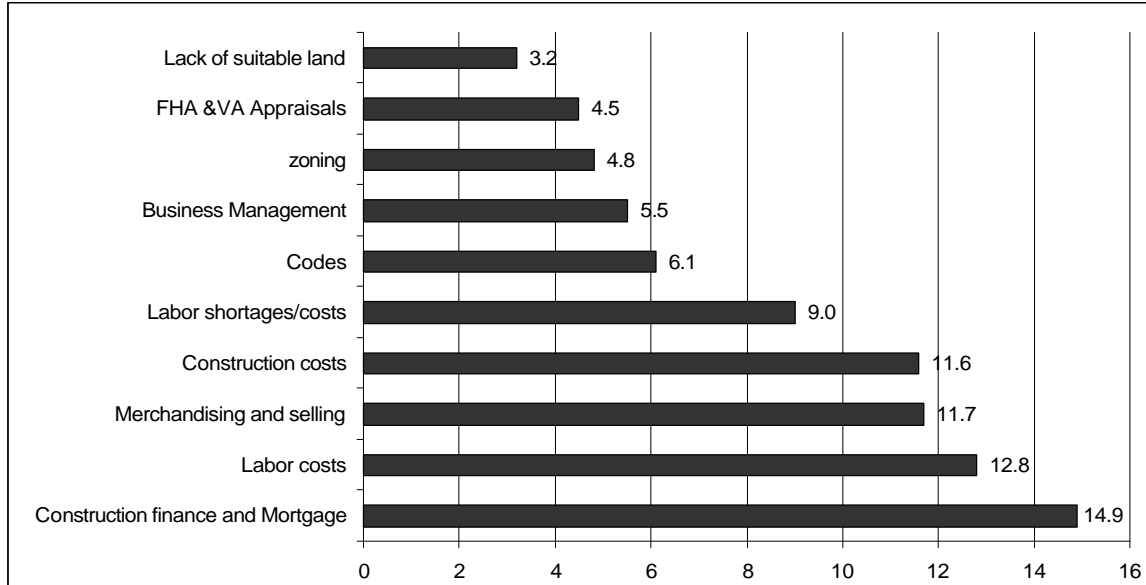
Regulatory Perception

When and to what extent have government regulations become a burden on the housing industry? Are regulations blamed for the ills and problems of executing efficient developments? What are the current perceptions about regulations? And how are they changing over time?

Two surveys completed by the National Association of Home Builders in 1964 and 1969, showed that at that time, government regulations were not seen as a significant problem by the housing industry. In the 1960s, construction costs, finance, labor costs, and lack of skilled labor were the major obstacles in developing. In 1964, for example, over 25 percent of the respondents indicated both construction finance and labor costs as the primary obstacles, and only 6.1 percent indicated codes as an issue. (Figure 1)

By the 1970s a dramatic shift in the relative importance of the problems had taken place. Government regulations as well as financing difficulties had become the central problems of the industry. According to Seidel, in 1976, 78 percent of respondents chose government imposed regulations as a problematic issue in doing business. More than half of the respondents chose problems with obtaining financial help and mortgages. By 2002, financial issues completely disappear, while imposed regulations and the availability of suitable land for development continue to dominate as the main indicators of difficulties.

Figure 1
National Association of Home Builders Survey of Significant Problems In 1964
Percent Distribution.
(Source: Seidel, 1978)

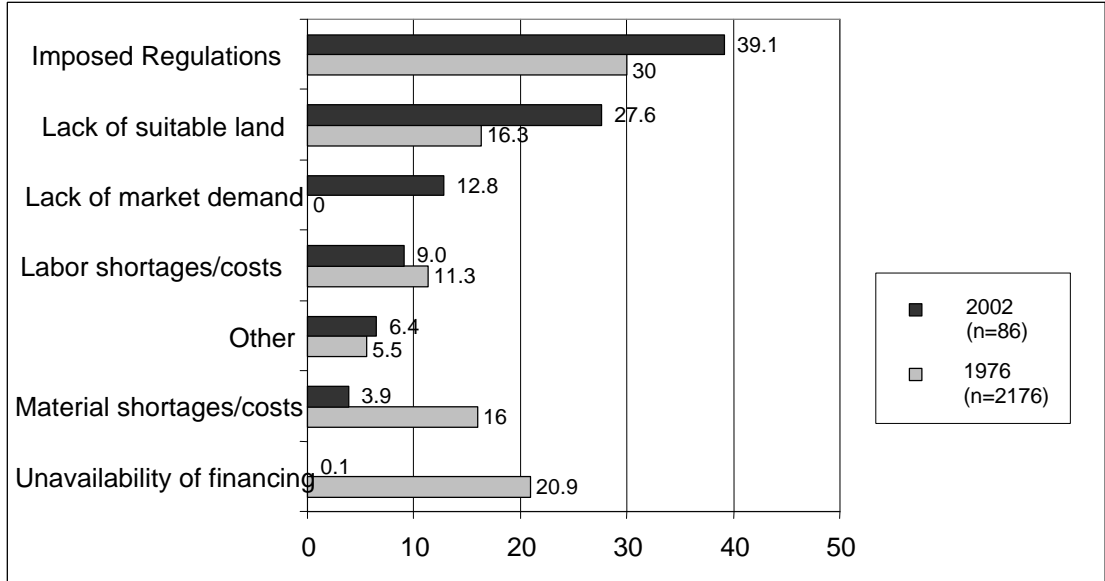


The measurement of government regulation as a perceived problem is also evident in the simple weighting scheme applied to the given answers. In the case of the 2002 study, the weighted response shows government regulation with a total score of 39.1 (compared to a total score of 30.0 for the 1976 results). (Table 1 and Figure 2)

Table 1
Three Most Significant Problems in Developing 1976, 2002
Percent of Respondents Selecting

<i>Rank</i>	Percent of developers <i>1976</i> <i>(n=2176)</i>		Percent of developers <i>2002</i> <i>(n=86)</i>	
1	Government Imposed Regulations	78.0%	Government Imposed Regulations	73.0%
2	Unavailable Financing	58.0%	Lack of suitable land	51.0%
3	Lack of suitable land	50.0%	Lack of Market Demands	24.0%

Figure 2
Housing Industry Significant Problems Comparison
1976 -2002
(weighted scale selection) *



*1976 data is based on a 3, 2, 1 weighted scale with totals divided by a factor of 6; 2002 is an average of respondents 3, non-scaled, selections. 1976 data from Seidel.

According to these surveys, for a quarter of a century, government imposed regulations have been a central and growing problem for the housing industry. While regulations as a whole are clearly seen as a problematic issue, the following section describes the specific aspects of regulations which are seen as most burdensome.

In 1976, the two aspects of regulation considered most onerous by developers were local administrative discretion and unnecessary delays. Both of these aspects were cited by over 25 percent of the respondents in 1976; these trends continue in 2002. Burdensome aspects of regulations still center on issues of government bureaucracy, discretion, and organization. Over 23 percent of the respondents cite unnecessary delays and individual vacillations, with lack of coordination among government regulatory agencies a close third (22 percent). (Table 2)

These figures are also reflected in the frequently repeated comments offered by the developers:

- “The biggest problem we face is when regulations/fees are changed after a project has been approved. I would like to see a process that ‘rests’ the developer at the time the preliminary plat is approved. We can deal with just about anything if it is known.

What hurt[s] us are the inconsistent approval times and regulation changes after the approval of the preliminary plat."

- "Regulatory agencies exceed their authority to practice social engineering, architecture, and micro-management."
- "The biggest problem that we see with regulations is not the regulations themselves, but the various interpretations by staff and zoning officials."
- "They make up their own rules."

Table 2
The Most Burdensome Aspects of Regulation 2000-2002
(National Average Distribution)

<i>Aspect of Regulation</i>	<i>Percent Developers 1976 (n=2150)</i>	<i>Percent Developers 2002 (n=84)</i>
Local administration discretion	26%	23%
Unnecessary delays	26%	24%
Cost of paperwork	17%	10%
Limitations on what can be built	11%	7%
Lack of coordination among agencies	16%	22%
Unnecessary requirements	0%	21%
Others	8%	0%

The attitudes toward government regulations are consistent throughout the country with slight variations according to the regions. For example, unnecessary delays are seen as the most problematic issue in the West, Midwest and South, while local government discretion tops the list in the Northeast. On the other hand, the Northeast performs slightly better in eliminating unnecessary delays. (Table 3)

Concerns regarding the power and impact of regulations ultimately lead to some amount of caution when deciding where to build. Less than 4 percent of the respondents indicated that regulations are not a consideration in deciding where to build. A strong majority, 75 percent of the developers surveyed, indicated that the level of governmental intervention and control is an important consideration. These numbers indicate a slight increase from 1976, when 68 percent indicated regulation as an important consideration. (Table 4)

Table 3
The Most Burdensome Aspect of Regulations by Region 2002

<i>Aspect of Regulation</i>	<i>West (n=20)</i>	<i>Midwest (n=22)</i>	<i>Northeast (n=19)</i>	<i>South (n=23)</i>
Local administration discretion	23%	22%	25%	22%
Unnecessary Delays	26%	24%	18%	24%
Cost of paperwork	6%	11%	14%	11%
Limitations on what can be built	8%	7%	4%	8%
Lack of coordination among agencies	22%	20%	21%	24%
Unnecessary requirements	8%	16%	11%	10%
Others	8%	0%	7%	2%

Table 4
Importance of Government Regulations in Deciding Where to Develop

<i>Regulation impacting development location</i>	<i>1976 (n=2239)</i>	<i>2002 (n=85)</i>
An important consideration	68%	75%
Considered somewhat	22%	21%
Not a consideration	10%	4%

The consistency of these numbers in the last 25 years establishes a clear correlation between development location decision and government regulation. When compared regionally, regulation poses the greatest impact on location decisions on the West (81 percent) and the South (75 percent). (Table 5)

The number and type of regulations affecting the housing industry easily number in the hundreds. Already in 1979, a study by the National Institute of Building Sciences shows that no less than 321 codes of federal regulations affect the building process. (NIBS 1979,

3-11) The same study also points to the growing number of organizations involved in the process of regulating development. For example in 1979 at least 91 different organizations were involved in generating building codes and standards.

Table 5
Importance of Government Regulations in Deciding Where to Develop by Region

<i>Region</i>	<i>Not a consideration</i>	<i>Considered somewhat</i>	<i>An important consideration</i>
Northeast (n=19)	8.3%	25.1%	66.6%
South (n=23)	--	25.0%	75.0%
Midwest (n=22)	5.5%	22.3%	72.2%
West (n=21)	4.6%	13.0%	81.0%

Obviously not all regulations are perceived as equal or detrimental to development. In trying to understand the relationship between various regulations and their impact on development, we have asked respondents to indicate the type of regulations that increase the final selling price of a unit by 5 percent. (Table 6)

Clearly, the two areas that stand out as impacting development are Subdivision Regulations and Building Codes. Fifty nine percent of the developers surveyed indicated that unnecessary elements of subdivision regulations were responsible for a more than 5 percent increase of the final selling price. Comparing the results to 1976 developers evidently continue to view subdivision regulations and building codes as a major problem and a source for increases in housing costs. (Table 6)

In comparison to the 1976 study, the impact of subdivision regulations on cost has somewhat declined, while other factors such as building codes, state laws, and energy requirements have increased. Financing and costal regulations were considered by most respondents in 2002 to have the least affect on the cost of the housing units. The reduced financing impact may be attributed to the considerable changes in funding and the structure of mortgages since the 1970s, with a greater reliance on private banking than government institutions. Coastal zone regulations' low impact is probably due to their geographical limits, and thus their restricted effect on the majority of the respondents. Yet in the West and the Northeast these regulations ranked fairly high. For example, in the Northeast 70 percent of the respondents indicated that coastal regulations increase the cost of housing units by more than 5 percent.

Table 6
 Unnecessary Cost of Regulations 1976 and 2002
 Indicating More Than 5% Increase to Cost

<i>Type of Regulation</i>	<i>Percent Developers see an increase of unit cost by more than 5% 1976 (n=2471)</i>	<i>Percent Developers see an increase of unit cost by more than 5% 2002 (n=83)</i>
Subdivision Regulations	72%	59%
Building Codes	37%	52%
Zoning	36%	46%
State Development laws	33%	42%
Floodplain Restrictions	25%	32%
Energy Codes	19%	31%
Costal Zone Regulations	16%	24.5%
Mortgage and Financing	29.5%	3%

(*The definition of necessary is that which is essential to health, safety, and public welfare.)

Regulations as an Exclusionary Device

Government regulations have often been credited and blamed for the decrease in housing affordability through an increase in costs, and through prohibiting certain types of developments. As early as 1969, the National Commission on Urban Problems (The Douglas Commission) warned that: “The central problem of land-use regulation today is how to achieve the ambitious objectives of these regulations without, in the process, sacrificing other essential public objectives. Of great concern to the Commission is how to achieve the legitimate objectives without misuse of the rules to raise the housing costs and exclude the poor.” (cited in Seidel 1976, 125) The exclusionary nature of regulations is of particular concern when higher income communities utilize various ordinances in order to prevent the introduction of lower income or affordable housing into their jurisdictions.

In a few instances, our study examined the universe of various regulations according to the median income of the communities surveyed. (see Appendix A for characteristics of

sample jurisdictions). The results show that in higher income communities, approval of development takes longer than in those with lower incomes. Higher income communities also provide fewer options for performance guarantees, require a higher dedication of open space from the developer, and generally are the ones to implement growth control measures. (Table 7) Although the sample is relatively small, such indications suggest that exclusionary tactics in these higher income communities may be more prevalent than is often assumed.

Table 7
Growth Control Measures by Income of Jurisdiction

<i>Median Income of Jurisdiction</i>	<i>Percent of Jurisdictions implementing Growth Control Measures (at least one)</i>	<i>Percent of Jurisdictions Not implementing Growth Control Measures</i>
Low (n=10)	0%	100%
Moderate (n=74)	24%	76%
Middle (n=51)	41	59
High (n=14)	21	79

The survey results clearly demonstrate that government regulations are a major issue of concern to the residential construction industry, and are one of the primary problems in doing business. This trend has been increasing since the 1960s, with no signs of improvement. The housing industry views the two most burdensome aspects of regulation as local administrative discretion and the lack of coordination among various agencies. Subdivision regulations and controls are seen both in the 1970s and in 2002 as the one aspect of regulation most responsible for unnecessarily increasing the cost of housing. Furthermore, the results substantiate the notion that regulations are often a barrier to affordable housing, and are used as an exclusionary device by higher income communities.

Subdivision Planning and Control

A subdivision is the division of a tract of land into two or more lots. In the early days of urban development and expansion, regulating the act of subdividing was basically provided through various surveying rules methods and practices. The aim was to provide a more efficient method for selling land through recording plats of land by dividing them into blocks and lots which were laid out and sequentially numbered. The platting facilitated the sale of land and prevented conflicting deeds. Uniformity was seen as a way to facilitate both surveying methods and the assessment of property.

Land speculation, uncontrolled growth and inadequate building construction in the 19th century raised many concerns over the act of subdividing the land. Premature subdivision created an oversupply, leading to the instability, and ultimate deflation, of property values. Depreciation of economic value brought tax delinquencies and widespread foreclosures. Partial development of tracts often resulted in conflicting property titles, misaligned streets, increased costs, and reduced provisions for public amenities.

In Massachusetts, for example, early subdivision regulations originated in a concern over the effect of the development of public and private streets. The City of Boston passed a regulation in 1891 stating that no person might open a public way until the layout and specifications were approved by the street commissioners.

The lack of coherent standards and poor coordination between public agencies led professional and government officials to push for reform in planning laws. Such pressure prompted the First National Conference on City Planning and the Problems of Congestion held in Washington in 1909. The conference was the first formal expression of interest in a systematic approach to solving the problems of America's urban environment. At this conference and those that followed, the ground work for city planning structure and implementation techniques were formed. Issues such as “The Best Methods of Land Subdivision” and “Street Widths and Their Subdivision” established the basis by which federal, state, and local governments established zoning and subdivision regulations in the following years.

World War I gave planners and architects an opportunity to experiment with their ideas with government backing. Starting in 1917, Congress apportioned \$110 million to the Bureau of Industrial Housing to plan and construct (through subcontractors) housing and transportation needed for shipbuilding and armament centers. Under the direction of F.L. Olmsted Jr., architects, landscape architects, planners, engineers, contractors, physicians and social workers drew up a set of recommendations for war and postwar industrial housing. These recommendations aimed at producing self sufficient neighborhood units fitted to the natural topography. They also provided guidelines and measurements for building arrangements. Decentralization of the American city received a major boost at the end of World War I and a search began to stimulate investment in order to keep the expanded war economy aloft. The effort culminated in the formation of a network of developers and interest groups called Better Homes in America. The movement encouraged home ownership and spread knowledge of financing associated with home purchasing and home improvements. With the new construction cycle -- the acquisition of land, the opening of routes to the suburbs for the automobile, and the highway development program – speculative, uncontrolled development produced a new metropolitan fringe. As the city boundaries expanded in an unrestrained fashion, a new apparatus of planning and control was sought.

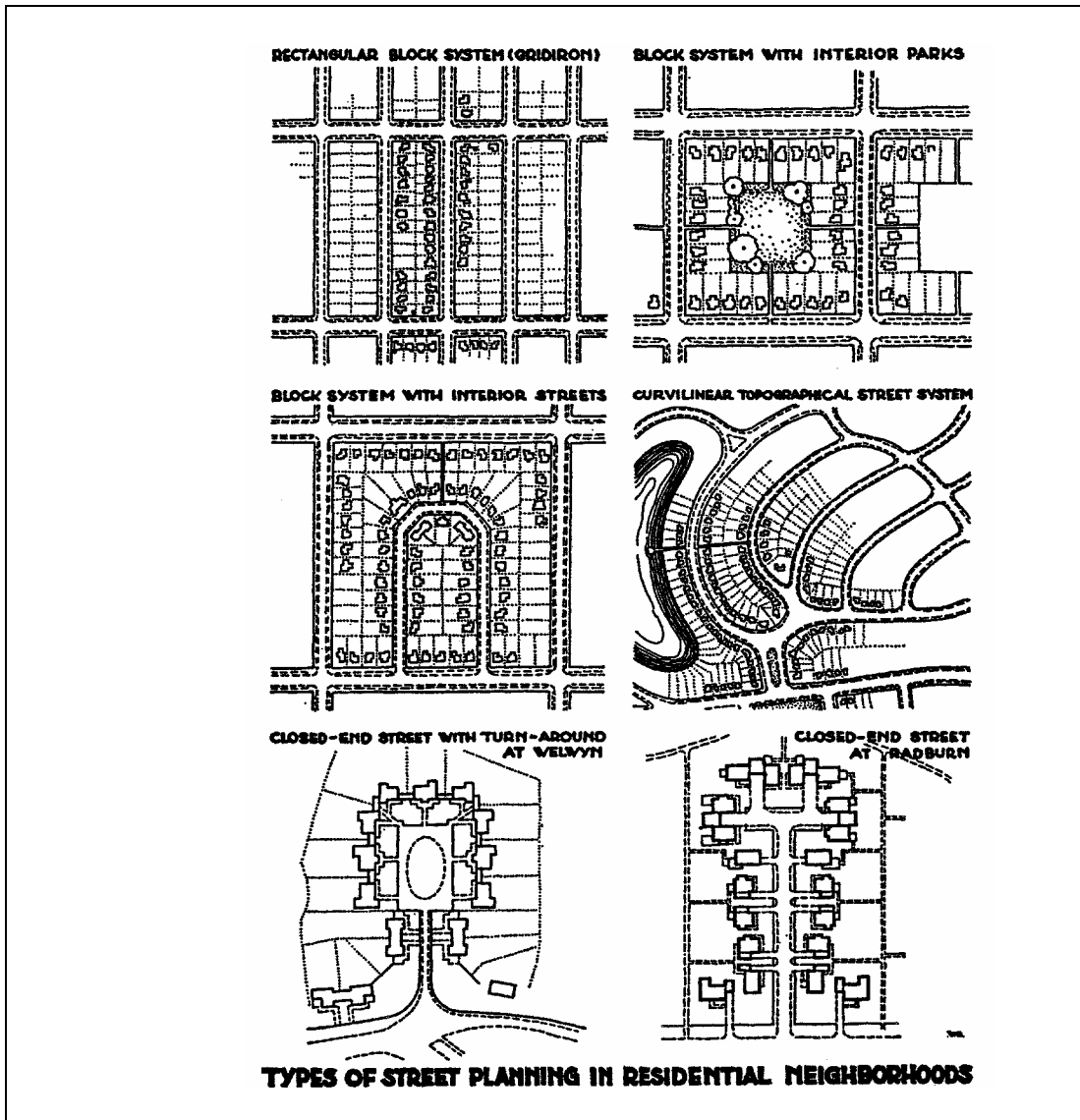
The Federal government published the Standard City Planning Enabling Act (SCPEA) in 1928 in recognition of the importance of providing for planning control at the local level, and to address the problems created by land speculation and premature subdivision development,. In addition to serving as a tool for recording and conveying property, the Act gave emphasis to onsite improvements needed to support demands created by new subdivisions. Road layouts, block sizes and lots, sidewalks, and drainage facilities were addressed as ways to assure minimum standards of construction, livability along with the control of development itself.

Various conferences during that time reiterated the acceptance of the residential neighborhood, or subdivision, as a special entity that needed to be protected and deliberately. In 1932, for example, the Hoover administration called for a special President's Conference on Home Building and Home Ownership. More than 3,700 experts on home finance, taxation, and planning of residential districts formed committees and put forward various recommendations. Some of the most influential recommendations of the Conference came from the Committees on City Planning and Zoning, Subdivision Layout, and Home Finance and Taxation.

The Committee on Subdivision Layout was concerned with controlling speculative developers. They proposed the adoption of good subdivision engineering and design and the enforcement of minimum standards to eliminate de-stabilizing practices. (Figure 3)

To further encourage coordinated local planning, the Advisory Committee on City Planning and Zoning, appointed by the Secretary of Commerce, published the Model Subdivision Regulations in 1936 through the National Resource Committee. By 1941, thirty-two States had passed legislation granting the power of subdivision control through the establishment of local planning commissions. By exercising the state's legislative "police power", the right of a landowner to sell property could be withheld until approved by a designated authority that was mandated to "promote the community health, safety, morals, and general welfare." (Lautner 1941, 1) Local planning commissions, once authorized and empowered by the community, adopted rules and regulations governing subdivision procedures within their jurisdictions. Most of these regulations were adopted from the Federal Government's established criteria, in particular those of the Federal Housing Authority.¹

Figure 3
 Street Planning and Subdivision Layouts.
 (The President's Conference on Home Building and Home Ownership, 1932)



The following extract from Massachusetts in 1953 is an example of a typical law:

... subdivision control law has been enacted for the purpose of protecting the safety, convenience and welfare of the inhabitants of the cities and towns ... by regulating the laying out and construction of ways in subdivisions providing access to the several lots therein, but which have not become public ways, and ensuring sanitary conditions in subdivisions and in proper cases parks and open areas. The powers of a planning board ... under the subdivision control law shall be exercised with due regard for the provision of adequate

access to all lots in a subdivision by ways that will be safe and convenient for travel; for lessening congestion in such ways and in the adjacent public ways; for reducing danger to life and limb in the operation of motor vehicles; for securing safety in the case of fire, flood, panic and other emergencies; for ensuring compliance with the applicable zoning ordinances or bylaws; for securing adequate provisions for water, sewerage, drainage, underground utility services, fire, police, and other similar municipal equipment, and street lighting and other requirements where necessary in a subdivision; and for coordinating the ways in a subdivision with each other and with public ways in the city or town in which it is located and with the ways in neighboring subdivisions. (MA Subdivision Control Law, MGL, Chapter 41, Sections 81K)

The rationale for government imposition of subdivision controls is based in the police power - the right of political entities to regulate in order to promote for the health, safety and general welfare of the community. As such, three general goals exist in the establishment of such regulations:

- preventing premature, partial subdivisions which are poorly linked to the broader community
- preventing poor quality, substandard subdivisions with inadequate public facilities and infrastructure
- reducing financial uncertainty and risk to the investor, buyer and the community

Seidel (1978) also points to two important factors that resulted from these noble goals:

- the exclusionary implications of subdivision regulations
- the hidden increase of cost due to a prolonged approval process

With regard to the exclusionary aspect, Seidel writes: “The desire to ensure high-quality subdivisions is sometimes synonymous, in effect if not always in intent, with the exclusion of those people who can afford only low-cost housing. Thus any rationale for extensive subdivision requirements justified on the basis of avoiding ‘blight’ demands more than superficial inspection. The level of public improvements required must be scrutinized to determine whether or not the regulations are actually designed to erect an economic barrier to keep out the poor and, increasingly, those with a moderate income as well.” (Seidel 1978, 125)

The prolonged administrative and approval process required in the administration of subdivision regulations not only increases the financial risk for the investor/developer but also increases the cost to the home buyer. According to Seidel, for every additional month added to the completion date, the final selling price of the unit increases by 1-2 percent increase. (Seidel 1978, 32) With our survey indicating a steady rise in the average time it takes to receive subdivision approval over the last 25 years, the increase in cost has continued to be passed on to the consumer.

With subdivision regulations controlling and shaping so much of planning and construction, what are their current impacts on housing developments? How are they practiced and enforced? How are they viewed by those who administer them and those who must abide by them?

Our survey of public officials and developers provides some answers by looking at three main aspects of the subdivision regulatory process: the administrative process, the site and design standard requirements, and the relationship between other regulatory frameworks such as growth controls, and subdivision development.

The Administrative Process

Subdivisions in the United States continue to develop at a rapid pace. On average, in the years 2000, 2001 and 2002, our surveyed jurisdictions have approved 40 new subdivisions annually. The majority of these subdivisions (41 percent) had more than 50 dwelling units and 24 percent had 25-50 dwelling units. Regional analysis shows that the average annual number for the Northeast is 24 subdivisions, for the Midwest 30 subdivisions, for the South 55, and for the West 27 subdivisions. Not surprisingly, both the South and West mostly approved large subdivisions with over 50 dwelling units. Over 51 percent of the total subdivisions approved in the South, and over 48 percent of the total subdivision approved in the West had 50 dwelling units or more. In the Northeast, where large tracks of land suitable for development are uncommon, the majority of subdivisions approved were between 6 and 25 units. (Table 8)

Table 8
Percentage of Subdivisions Approved 1999-2002
(by size)

<i>Region</i>	<i>Less than 6 dwelling units</i>	<i>6-25 dwelling units</i>	<i>26-50 dwelling units</i>	<i>More than 50 dwelling units</i>
Northeast (n=35)	16%	47%	22%	16%
South (n=43)	10%	15%	24%	51%
Midwest (n=48)	8.5%	23%	23%	45%
West (n=33)	12%	15%	24%	48.5%

Procedures for subdivision approval are largely based on standards established by the Federal Housing Administration (FHA) in the late 1930s and early 1940s. (Housing and Home Finance Agency 1952) There are three main stages: pre-application; conditional approval of preliminary plat; and final plat approval. In the pre-application stage, the subdivider gathers the information and data on existing conditions, studies the site suitability, and with the help of professionals, develops a preliminary plan in sketch form

to be submitted to the planning commission for advice and assistance. The planning commission reviews the plan in relation to a master plan, design standards, and improvement requirements, and notifies the subdivider of their issues and concerns, if any.

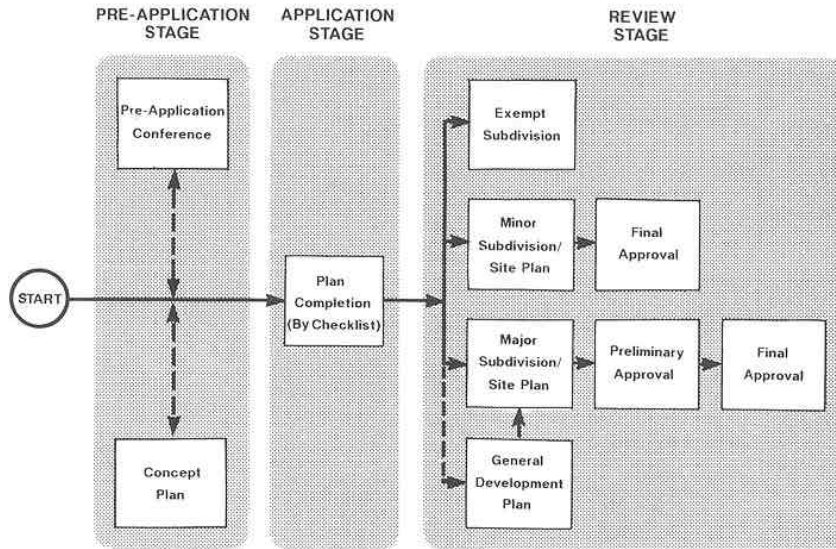
In the second stage, the subdivider, if opting to develop, submits a revised preliminary plat for conditional approval by the planning commission. Once the plan is approved, the subdivider stakes out the plat according to the approved preliminary plan, and either installs improvements or posts bonds to guarantee completion of improvements. The final plat is then submitted for final approval. Once the planning commission approves the final plat, the new plats are recorded and development begins.

While the original FHA guidelines seem simple and straight forward, the realities of the last few decades have brought growing complexity and frustration for those involved in the process. The following statement by the Urban Land Institute indicates the level of these frustrations: “American developers of housing must deal with an expanding array of regulations at every level of government. Unreasonable regulations on development inevitably inflate paperwork required for a project and intensify the complexity of data, analysis, and review procedures for both public and private sector. Ultimately, the delay caused by the regulatory maze produces higher cost housing through holding costs, increased expenses due to risk, uncertainty, overhead, and inflated cost of labor and materials, and other more hidden costs.” (In Listokin and Walker 1989, 177)

As a result, various task forces have offered solutions or recommended models to expedite the approval process. Most suggest an informal stage, where the nature of the development is discussed and the procedure for application is clarified. Another common suggestion is the classification of development according to the type of impact it carries. Those developments that are less “problematic” would go through an expedited process. Figure 4 is an illustration of such a procedure suggested by Listokin and Walker (1989).

Unfortunately the majority of these models do not specifically describe how to quantify the type of development or its impact, nor do they enforce an “informal” pre- application step. Since no exact typology is given as to the impact of each development, interpretation remains a subjective exercise by the local planning officials or the abutters.

Figure 4
 Model Ordinance Subdivision and Site Plan Approval Procedure
 (Source: Listokin And Walker)

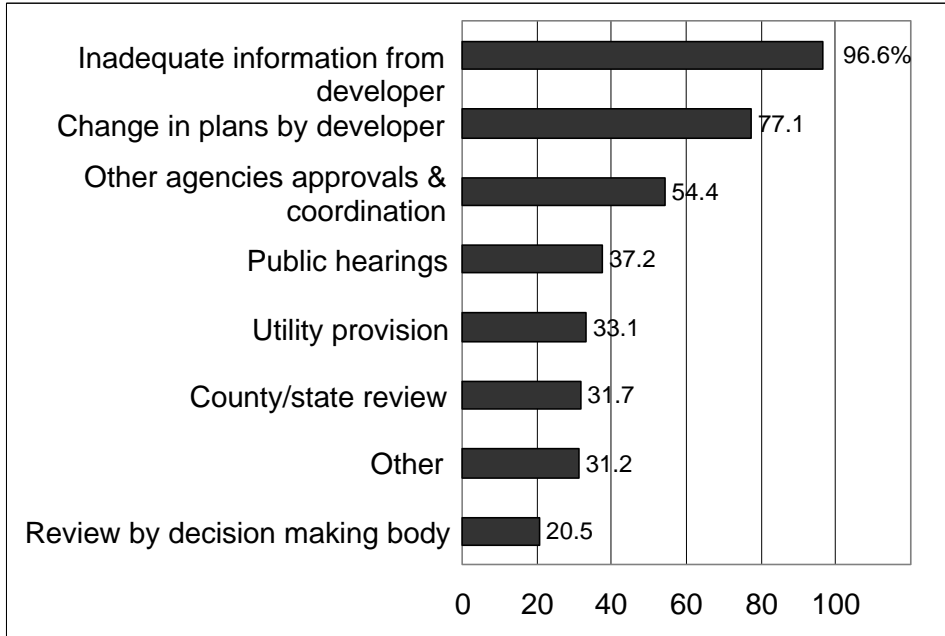


Indeed, only 60 percent of the jurisdictions surveyed required some form of a sketch or concept plan before a preliminary plat is submitted. (Table 9) Almost all public officials surveyed (97 percent), lay blame for approval delays on developers. In their judgment developers do not provide sufficient information about proposed developments, and often change plans. This type of assessment provides a clear indication that coordination and lack of communication between developers and public officials are major problems. However, the approval process itself is also partly to blame: more than half of the public officials surveyed attribute delays to inefficient management and lengthy approval processes by other agencies and commissions. (Figure 5)

Table 9
 Steps Required in the Approval Process
 (n=157)

<i>Steps</i>	<i>Percent of Jurisdictions requiring</i>
Sketch plan	60%
Preliminary plat approval	92%
Terms and conditions approval	80%
Final plat approval	99%

Figure 5
 Percentage of Respondents Indicating Reasons for Delays in the Subdivision
 Approval Process
 (n=159)



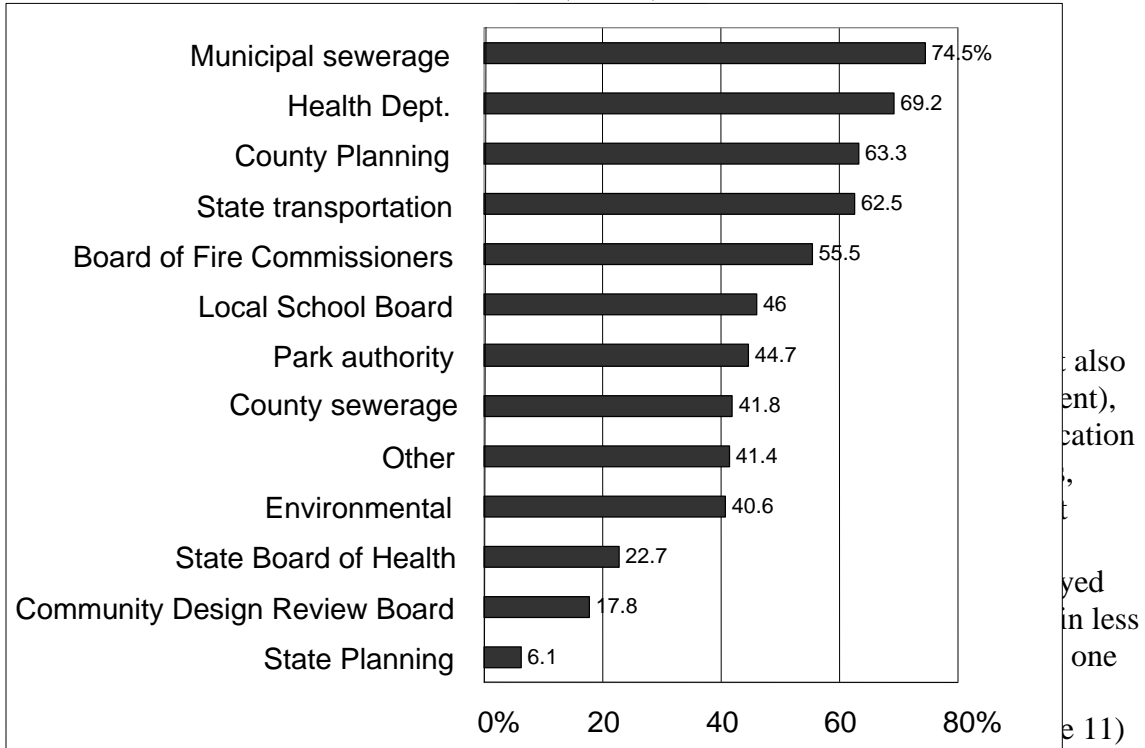
The regional distribution shows a strong correlation and agreement between the various regions on the preliminary reason for delays. It is interesting to note, however, that in the Northeast, respondents most often cited government and public procedures as reasons for delays in the approval process. (Table 10)

The proliferation of various agencies involved in this process is another indication of increased bureaucracy and red tape. Public officials reported that in more than 40 percent of cases brought for approval, at least 10 other agencies (beside the planning commission) took part in the approval process. Topping the list were municipal sewage and health departments, as well as higher level government groups such as the county and state transportation agencies. (Figure 6)

Table 10
Jurisdictions Indicating Reasons for Delays in the Subdivision Approval Process
Regional Distribution

<i>Reason for delays</i>	<i>Percent Respondents Northeast (n=35)</i>	<i>Percent Respondents South (n=43)</i>	<i>Percent Respondents Midwest (n=48)</i>	<i>Percent Respondents West (n=33)</i>
Change in development plan	53%	70%	70%	82%
Inadequate information from the developer	94%	93%	89%	88%
Utility provisions	23.5%	28%	25.5%	24%
Public hearings	38%	17%	34%	33%
County and state reviews	41%	33%	17%	9%
Final Review	9%	16%	21%	15%
Various agencies' approvals	56%	39.5%	38%	42%

Figure 6
 Frequency and Type of Agencies Participating in the Subdivision Approval Process.
 (n=157)



When analyzed by region, the majority of jurisdictions in the South (53.5 percent) and the Midwest (46.8 percent) approve preliminary plats in less than 2 months. In the West (34.4 percent) and in the Northeast (46.9 percent), the majority of jurisdictions approve preliminary plats within 2-4 months.

Table 11
 Estimate of Approval Time by Public Officials
 (1976 Data from Seidel)

<i>Procedure</i>	<i>Time Required</i>	<i>Percent of Municipalities 1976</i>	<i>Percent of Municipalities 2002</i>
Preliminary Approval	Less than 2 months	50.0	33.9
	2-4 months	38.3	41.7
	5-7 months	6.4	14.9
	more than 7 months	<u>5.3</u>	<u>9.5</u>
	Total	100.0 (n=78)	100.0 (n=158)
Variance or special exception	Less than one month	32.9	14.2
	1-2 months	57.0	60.8
	3-4 months	7.6	20.3
	more than 4 months	<u>2.5</u>	<u>4.7</u>
	Total	100.0 (n=74)	100.0 (n=157)
Rezoning	Less than one month	10.0	2.8
	1-2 months	36.7	24.4
	3-4 months	40.0	41.4
	more than 4 months	<u>13.3</u>	<u>31.4</u>
	Total	100.0 (n=74)	100.0 (n=157)

Unlike public officials, developers reported very different estimates on the time taken to obtain approvals. According to the developers surveyed, it took 17 months on average in 2002 to obtain all the required permits. This lengthy approval time is consistent with the findings from Seidel in 1976. In both 1976 and 2002, the majority of the developers surveyed, 47 and 44.9 percent respectively, received all approvals for development in between 13 and 24 months. The percentage of developers indicating that they received all approvals in less than 7 months declined by almost half in 2002 in comparison to 1976. Furthermore, the number of those reporting greater than two years to get approvals doubled in 2002 to 20.5 percent. (Table 12)

Discrepancies also exist in the estimated time required for granting variances and zoning relief. According to the majority of the developers surveyed, it took more than 4 months to obtain variances, special exceptions or rezoning. By contrast, the majority of public

officials, on the other hand, indicated an average of one to two months for variances, and three to four months for rezoning. (Table 11 and 13).

When distributed according to regions, 82 percent of the developers in the Northeast and 83 percent of the developers in the Midwest stated that it took them on average more than four months to get rezoning approved.

Table 12
Average Time to Get Approvals According to Developers 1976, 2002
Percent Respondents

	<i>Less than 7 months</i>	<i>7-12 months</i>	<i>13-24 months</i>	<i>More than 24 months</i>
1976 (n=35)	14.5%	27.5%	47%	11%
2002 (n=83)	6.4%	28%	45%	20.5%

Table 13
Estimate of Approval Time for Variances or Rezoning by Developers

<i>Procedure</i>	<i>Time Required</i>	<i>Percent of Developers 2002 (n=80)</i>
Variance or special exception	Less than one month	0
	1-2 months	28.6
	3-4 months	32.9
	more than 4 months	<u>38.5</u>
	Total	100.0
Rezoning	Less than one month	0
	1-2 months	6.8
	3-4 months	23.3
	more than 4 months	<u>69.9</u>
	Total	100.0

The discrepancy in time estimations between public officials and developers may be explained by their subjective and different views of the development process. While public officials see timely approval as a yardstick for measuring public performance and service, developers see each delay as unnecessary bureaucratic process. Another explanation may be the frequency and length of time by which special variances and

zoning relief are processed and approved. As noted in Table 5, most public officials indicated that when such measures are required, approval of the relief itself can take on average between 3 to 4 months.

Interestingly, the time it takes to get an approval is much shorter in low and moderate income communities. Over 80 percent of these jurisdictions approve subdivisions in less than 5 months as compared to 60 percent of the higher income jurisdictions. Although a lengthier approval process in middle and higher median income communities may indicate a more detailed and comprehensive approval process, it can also indicate that delays and length may be used as a tactic to exclude development. (Table 14)

Table 14
Time Required For Subdivision Approval by Median Income of Jurisdiction
(See explanation of income grouping in Appendix A)

<i>Jurisdiction by income</i>	<i>less than 5 months</i>	<i>5-10 months</i>	<i>more than 10 months</i>	<i>Total</i>
Low (n=11)	81%	19%	0%	100%
Moderate (n=78)	87%	13%	0%	100%
Middle (n=55)	67%	21%	12%	100%
High (n=14)	60%	40%	0%	100%

Relief from Regulations

Relief from regulations in the form of rezoning or design variances are seen by developers as major undertakings in the subdivision approval process. Administrative delays associated with such adjustments, and the need to face various local boards and planning commissions, not only point to possible costly delays but also to the inadequacy of existing regulations.

More than half (52.1 percent) of the surveyed developers indicated that they had to apply for some sort of relief in at least half of their projects, while 36.6 percent applied at least three quarters of the time. These numbers are striking particularly in comparison to 1976 where almost half of those surveyed (42.9 percent) indicated that they have almost never applied for such relief. (Table 15)

Table 15
Frequency of Developers' Application for Regulation Relief

<i>Percent of time applied for zoning relief or variances</i>	<i>Percent developers 1976 (n= 361)</i>	<i>Percent developers 2002 (n=85)</i>
Almost never	42.9%	14.1%
5% - 10% of the time	5.3%	11.3%
11% - 25%	6.1%	8.5%
26% - 50%	10.2%	11.3%
51% - 75%	3.9%	15.5%
76% +	31.6%	36.6%

Furthermore, when asked to point to the type of changes they apply for, many developers indicate that they want to build higher density single family areas and more multifamily units. They would also create more varied site and structural plans if they had the opportunity. Tables 16 and 17 show that in the majority of cases developers applied for variances or rezoning for more dense development and that an overwhelming majority (72 percent) had to design lower density developments because of existing regulations. These effects have remained consistent in the last 25 years , as shown in Table 16.

Such findings should alarm individuals dealing with housing reforms. As early as the 1970s, warnings existed about the consequences of various exclusionary devices. Restrictions against higher density developments, multiple housing types, minimum lot sizes and floor areas still affect the housing industry. Developers in both 1976 and 2002 felt subdivision standards and zoning regulations increased the cost of the homes they built, and decreased densities. In many instances these regulations pushed developers to build in greenfield locations, away from major urban areas where restrictions and abutters' objections may be less onerous.

Table 16
Type and Distribution of Relief Sought by Developers
in More Than 10 Percent of Their Applications

<i>Type of Relief</i>	<i>Percent Developers Responding (n=86)</i>
More dense single family	42.4%
Variation in lot size	39.7%
Introduce multi-family housing	31.7%

Table 17
The Affect of Subdivision Standards & Zoning Regulations on Development
1976 and 2002

<i>Affect</i>	<i>1976 Percent developers responding (n=378)</i>	<i>2002 Percent developers responding (n=86)</i>
<i>Build in less populated areas</i>	41%	38.5%
<i>Build more expensive units</i>	61%	61%
<i>Build less dense development</i>	62.5%	72%

Negotiations

Negotiations between developers and local jurisdictions can result in delays and increases in costs, but also improved design and suitability. Although public officials view negotiation as a way to amend existing specifications to suit unique situations, the overwhelming majority (75.5 percent) of surveyed jurisdictions reported that either none or less than 10 percent of their requirements were negotiated. Only 3.2 percent reported negotiating more than 25 percent of their specifications and none reported negotiating more than half.

The greatest amount of negotiation seems to involve matters in which the developer may not see an immediate gain in value of investment and in matters that may be perceived as

adding to the “public good” rather than to the specific development itself. Some of these include off site improvements (28 percent), streetscape design (25 percent) and dedication of land for recreation or open space (13 percent). By contrast, issues with direct impact on the development site, such as infrastructure, tend to be less contended by developers. (Table 18)

Developers are generally discontented with negotiation and the general attitudes toward their intentions. These sentiments are reflected in a typical comment provided by one of the respondents: “City and county offices have no sense of fairness. They only consider exactions that make them appear more successful in protecting the community from the 'evil' developer that may be trying to be profitable.”

Table 18
Aspects of Subdivision Regulations Which Involve the Greatest Amount of
Negotiation between the Developer and the Jurisdiction.

<i>Subdivision Aspect</i>	<i>Percent Jurisdictions (n=157)</i>
Public utilities	1%
Water lines and facilities	3%
Performance guarantees	5%
Other	7%
Fees in lieu of dedication	8%
Sanitary and storm sewers	10%
Land dedication	13%
Streetscape	25%
Off-site improvements	28%

Fees and Improvement Guarantees

Municipalities use fees as one tool by which they recover their operating costs and generate revenues. While most fees are directly associated with various steps in the approval and construction process, improvement guarantees to ensure all enhancements are widely used as a precondition for approving the final plat.

Almost all jurisdictions surveyed impose fees on the submission of a preliminary plat (94 percent) and a final plat (91 percent). Less than half (40 percent) charge for submitting a sketch plat. Table 19 shows further distribution of fees related to permitting and inspections. Only 40 percent of those surveyed believe that these fees adequately cover administrative costs. Out of the 60 percent who replied that such fees are not sufficient, 80 percent indicated that fees only cover up to 75% of administrative costs.

The majority of jurisdictions surveyed (81 percent) require some form of improvement guarantees. Only 16 percent (24 jurisdictions) do not allow for bonding, and thus require that all improvements are installed before final approval. Such requirements may deter small scale developers who cannot provide up-front money for all improvements and thus limit development proposals to large scale companies.

Table 19
Type and Frequency of Fees Required From Developers

<i>Type of Fee</i>	<i>Percent of Jurisdictions Requiring (n=153)</i>
Tree removal permit	70 %
Sanitary sewer plan review fee	63%
Sanitary sewer system inspection fee	58%
Clearing and grading permit	55%
Water system review fees	48%
Percolation tests	44%
Drainage system inspection fees	43%
Paving & storm drain permit	37%
Sediment control permit	37%

Types of guarantees include surety bonds, escrow accounts, property escrow, sequential approval of subdivision, maintenance guarantee, and letter of credit. Although many jurisdictions use a multitude of guarantee types, the most widely employed are:

- | | |
|----------------------------------|------------------|
| 1. Surety bonds | 80% of the cases |
| 2. Maintenance guarantee | 74% of the cases |
| 3. Escrow account (cash or note) | 71% of the cases |

Out of the 80 percent jurisdictions which require bonding, 72 percent have a provision allowing for the reduction of the bond amount as improvements are completed. On average, it takes 5-7 weeks between completion of improvements and the release of performance guarantees.

The multitude of performance guarantee options offered by municipalities, and the provision for release of bonds are encouraging. Choice allows various type of developers to be involved in housing construction. For example, a small scale developer may be viewed as high risk to many surety companies and would either be charged high premiums or denied bonding. For such a developer, an escrow account, or even better, sequential approval of segments of the subdivision as improvements are completed, may be the only way for them to participate in housing development.

An interesting picture emerges when development guarantees are distributed according to the median income level of the jurisdictions. Table 20 shows that low and moderate income jurisdictions tend to offer more options in the type of guarantees offered than middle and high income communities. Greater selection of guarantees may encourage more developers to do business in those communities that offer them, and allow for greater housing variety and affordability. On the other hand, placing limits and the lack of such options in higher income communities may raise the question if indeed such practices point to exclusionary tactics.

Table 20
Level of Guarantees by Median Income of Jurisdiction

<i>Type of Jurisdiction by income</i>	<i>Few or no Guarantees offered</i>	<i>Some Guarantees Offered</i>	<i>Most Guarantees Offered</i>
Low n=11	0%	29%	71%
Moderate n=71	11%	70%	19%
Middle n=45	25%	56%	19%
High n=14	9%	55%	36%

Similarly the distribution of reimbursable provisions according to median income level, shows 72 percent of low income communities grant such reimbursements. These provisions include off-site improvements (sewer, streets, etc.) in excess of the immediate need of the specific subdivision under development, but may be required during construction or for upgrading to accommodate future expansion. By contrast, only 43 percent of the high income jurisdictions incorporate such provisions, ultimately

overburdening the developer and the potential homeowner with the cost of over design. (Table 21)

Table 21
Provision for Reimbursements by Median Income of Locality

<i>Type of Jurisdiction by income</i>	<i>Reimbursement Provided</i>	<i>Reimbursement not Provided</i>
Low n=11	72%	27%
Moderate n=69	77%	23%
Middle n=45	73%	27%
High n=14	43%	47%

Physical Improvements and Site Development Standards

One of developers' most widely voiced criticisms about subdivision ordinances are the inadequacy and inflexibility of their physical standards. Excessive street and right-of-way widths, rigid earthwork specifications, and over designed infrastructure systems are unfavorable to the introduction of site sensitive solutions, and often impede cost reductions. For example, right-of-way width for a residential subdivision street, as specified by the Institute of Transportation Engineers, has remained at 50 to 60 feet for at least 40 years (Southworth & Ben-Joseph 2003). Such ample space, designated for an exclusive, mono-functional land use within a residential environment, has contributed to the supposition that the present form of typical subdivisions is grossly wasteful in its use of energy, material and land. In a typical suburban subdivision, with 5000 square foot lots and 56 foot rights-of-way, streets amount to approximately 30 percent of the total development. When typical 20 foot driveway setbacks are included the total amount of paved space reaches to about 50 percent of the development.

A recent study by the American Rivers, the Natural Resources Defense Council, and Smart Growth America, shows that wide streets, excessive parking requirements and increased pavements around setbacks contribute to loss of potential infiltration.² Subdivision sewerage collection system standards are also so entrenched and widely accepted that alternative planning, sizing and location of the systems are seldom considered.

As early as 1967, the Urban Land Institute warned that: "the basic parameters for sanitary sewer design were set at the turn of the century and, for the most part, have remained

unquestioned since that time. Sewerage collection systems today are designed almost by rote, picking values off charts and conforming to standards which were in existence before the present generation of engineers were born.” (Newville 1967, 27) Tabors (1976) suggests that planners in particular feel inadequate to challenge proposals put forward to them because of perceived lack of expertise, and a lack of confidence in addressing engineering criteria and parameters.

On-site and Off-site Improvements

Obviously when a development is put into place, basic site improvements and infrastructure must be provided. It is widely accepted that grading, basic utilities such as water and sewer lines, and streets and sidewalks will be provided by the developer. Indeed the survey shows that in almost all jurisdictions (with a percentage rate of over 90% for all categories) on-site improvements such as streets, storm water systems, sewer and water, and fire hydrants are required. In many instances, the local jurisdiction may require the developer to carry out improvements off-site in other parts of the community or more typically in adjacent areas that may be impacted by the new construction. The distribution of on-site and off-site improvements as required by the various jurisdictions are presented in Table 22 and 23.

Table 22
Typically Required On-Site Improvements

<i>Type of Improvement</i>	<i>Percent Jurisdictions Requiring (n=159)</i>
Streets	100%
Storm drainage	100%
Fire Hydrants	94%
Sewer Mains	93%
Water Mains	92%
Curb and gutters	71%
Sidewalks	51%

Our survey did not ask for the specific provisions and standards for each requirement, nor did we attempt to calculate the actual cost of each provision. Nonetheless developers’ attitudes about subdivision requirements excessiveness and their affect on cost are clearly seen in Table 24.

Table 23
Typically Required Off-Site Improvements

<i>Type of Improvement</i>	<i>Percent Jurisdictions Requiring (n=157)</i>
Off-site Storm Drainage	59%
Off-site Streets	57%
Off-site Sewer	55.5%

The developers surveyed clearly express the belief that physical improvements and standards associated with subdivision development are excessive and often unwarranted. When asked to indicate which requirements present the greatest expense to conform to regulations, an overwhelming majority (80 percent) point to those associated with site design and only half with codes and requirements for buildings. (Figure 7) When asked to provide more specific details as to which they perceived as excessive, 52.2 percent of the respondents indicate those related to street construction, 44.6 percent nominate land dedication, and 43.1 percent storm sewer (underground piping for stormwater mitigation). (Table 25)

Table 24
Unnecessary Cost of Regulations
Indicating More Than 5% Increase to Cost

<i>Type of Regulation</i>	<i>Percent Developers see an increase of unit cost by more than 5% (n=83)</i>
Subdivision Regulations	59%
Building Codes	52%
Zoning	46%
State Development laws	42%
Floodplain Restrictions	32%
Energy Codes	31%
Costal Zone Regulations	24.5%
Mortgage and Financing	3%

(*The definition of necessary is that which is essential to health, safety, and public welfare.)

Figure 7
Requirements Presenting the Greatest Expense
(Percent Developers Responding) (n=83)

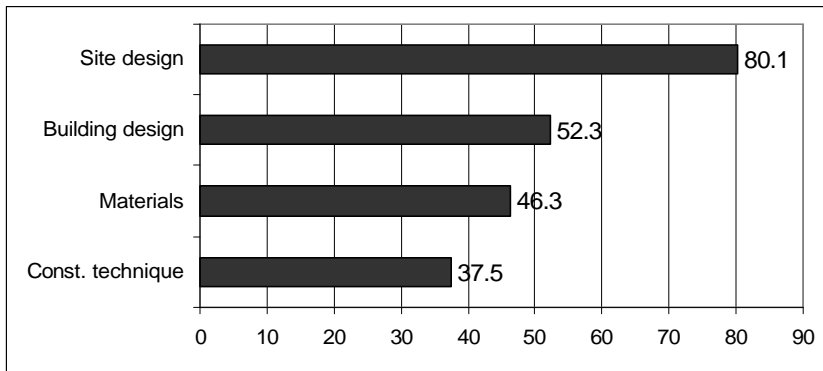


Table 25
Type of Requirement Seen as Excessive
(n=83)

<i>Type of Requirement</i>	<i>Percent of developers see as excessive</i>
Streets	52.2%
Land dedication	44.6%
Storm water piping	43.1%
Landscaping	31.3%
Water mains	30.1%
Sanitary sewer	26%
Sidewalks	25.7%
Underground utilities (electric, etc)	14.5%

When asked to indicate more specifically which physical standards within each category are excessive, the top choices were:

1. Street widths (75 percent of the respondents)
2. Street Right-of-Way (73 percent)
3. Land for open space (73 percent)
4. Street Trees (73 percent)

Not surprisingly most developers indicated that fees associated with physical improvements were also excessive, with the top being:

1. Sewer hook up fees (90 percent of the respondents)
2. Water hook up fees (85 percent of the respondents)
3. Fees in lieu of land dedication (79 percent)

While some might suggest that these perceptions are common to developers, it should be noted that many developers found certain standards to be reasonable and accommodating. For example, the majority of those surveyed did not find various pavement thicknesses for streets and sidewalks as excessive. The majority (83 percent) did not deem the requirement for curbs, sewer pipe diameter (72 percent) or land devoted to schools (65 percent) as unreasonable. One of the main questions that emerges from such findings is how many of these attributes translate to higher costs for the developers and thus the home buyer? (Table 26)

Table 26
 Developers' Assessment of Various Requirements
 (n=84)

<i>Requirement</i>	<i>Percent responding as Excessive</i>	<i>Percent responding as Not Excessive</i>
Street width	75%	
Street ROW	73%	
Pavement thickness		62%
Curbs		83%
Sidewalk width	56%	
Sidewalk thickness		70%
Water pipe diameter		55%
Water pipe material		80%
Water pipe depth		93%
Water pipe hook up fees	85%	
Sewer pipe diameter		72%
Sewer pipe material		75%
Sewer pipe depth		70%
Sewer hook up fees	90%	
Sewer system lay out		56%
Stormwater pipe diameter	62%	
Stormwater pipe material		50%
Stormwater pipe depth		45%
Stormwater pipe hook up	57%	
Stormwater system layout	73%	
Street trees	73%	
Street lighting		52%
Telephone lines		53%
Electric lines	60%	
Cable/TV lines		64%
Land for recreation	52%	
Land for open space	73%	
Land for schools		65%
Fee in lieu of land	79%	

Land Dedication

With growing general concern over sprawl and the consumption of open space, developers are often required to reserve or dedicate a portion of their land for public purposes such as open space, recreation, or for future public buildings such as schools. The popularity of this form of regulation is evident in their steady growth and implementation since the 1976 study. In 1976, 63 percent of municipalities surveyed had some form of land dedication requirements (both mandatory and permissive). In 2002 the rate increased to 81 percent with half, (49.6 percent) imposing dedication as mandatory through ordinances, and 32 percent as permissive, at the discretion of a decision-making body. Nineteen percent have no open space requirement at all. When an open space dedication is called for, the majority of the jurisdictions (52 percent) require 6 to 25 percent of the total land area to be left open. Almost all jurisdictions allow for some form of fees in lieu of land dedication. (Table 27)

Table 27
Typical Percentage of Total Land Area of a Subdivision Required to be Dedicated
for Recreational or Open Space Purposes

<i>Percent of development required to be dedicated for recreational or open space purposes</i>	<i>Number Jurisdictions</i>
None	26
1-5%	29
6-10%	38
11-25%	35
Over 25%	13
<i>Total</i>	141

When the jurisdictions that require the dedication of land are distributed regionally, the Northeast has the highest requirements with an average of 15 percent of the total developable land devoted to open space. The West, on the other hand, has the lowest requirements with an average of 9 percent open space dedication. These results may be partly attributed to compensating for the lack of open space and natural areas in the developed Northeast. Communities in this region may see a need to amend this shortage by requiring a larger percent of developable land dedicated for public use. (Table 28)

Although the West has the lowest average land dedication requirements, it has the highest percentage of jurisdictions (61 percent) regulating dedication as a mandatory legislation. The Midwest is the region with the lowest percentage of jurisdictions (47 percent) requiring some form of land dedication. (Table 29)

An interesting observation can be made when correlating the land dedication requirement according to the family median income of the jurisdictions. Both middle and high income communities show higher levels of land dedication requirements. In the case of high income communities, all are requiring some form of land dedication for open space, while low and moderate income communities are allowing more development to occur without asking for open space dedication. Do such trends point to exclusionary tactics by higher income communities? Do the lessening of land dedication requirements attract more development in lower and moderate income communities? Further research in this area would be valuable to answer some of these questions. (Table 30)

Table 28
Regional Average Percentage of Total Land Area of a Subdivision Required to be Dedicated for Recreational or Open Space Purposes

<i>Region</i>	<i>Average Percent of development to be dedicated for recreational or open space</i>
Northeast (n=29)	15%
South (n=36)	12%
Midwest (n=20)	9.5%
West (n=30)	9.3%

Table 29
Requirement of Land Dedication for Open Space by Region
(Percent of Jurisdictions)

<i>Region</i>	No Requirements	<i>Permissive</i>	<i>Mandatory</i>
Northeast (n=31)	6%	49%	45%
South (n=43)	16%	26%	58%
Midwest (n=35)	43%	26%	31%
West (n=32)	6%	32%	62%

Table 30
Land Dedication by Median Income of Jurisdiction

<i>Median Income of Jurisdiction</i>	<i>Mandatory or permissive</i>	<i>None required</i>
Low (n=11)	65%	35%
Moderate (n=67)	53%	47%
Middle (n=49)	91%	9%
High (n=14)	100%	0%

Modifying Subdivisions

Most public officials indicate that altering subdivision design by introducing new specifications, changing requirements, and introducing changes to the approval processes are common activities in their professional work. However the survey also shows that the overall number of jurisdictions reducing and amending standards is relatively small. The majority of jurisdictions maintain their existing standards, while others even choose to increase them.

Table 31 lists the most common amendments introduced between 1997 and 2002. Of particular interest are amendments to regulations that may reduce the cost of construction and support alternative development patterns. Of the jurisdictions surveyed, 17 (16 percent) have reduced their street width requirements, 26 (25 percent) have introduced more multifamily zones, and 25 (26 percent) are allowing more choice in housing types. (Table 32) It is interesting to note that when distributed regionally, the West and South are leading in the numbers of jurisdictions implementing such amendments. Almost half of the total jurisdictions that have reduced their street widths and introduced multi-family zone are in the West. It can only be hoped that experience gained by those communities which are reducing land consumption for streets and allowing higher densities will prove beneficial and guide others. (Table 33)

Table 31
Common New Subdivision Regulations Amendment Introduced 1997-2002
(Mentioned by at least 10% of Jurisdictions)

<i>Increased Specifications and New requirements</i>	<i>Decreased specifications</i>
Increase in minimum house size (sq. ft.)	Reduce street widths
Increase set backs	Reduce lot depth
Increase in lot size	
Introduce architectural review	
Introduce design Guidelines	
Introduce traffic impact studies	
Introduce stormwater plan	
Introduce wetland mitigation	
Introduce landscape and open space plan	
Introduce tree preservation	
Introduce conservation easements	
Introduce grading and erosion plan	
Introduce sidewalks requirements	
Introduce architectural review board	
Introduce economic development review board	
Introduce school agencies review	

Table 32
Distribution of New Specifications

<i>New Specification</i>	<i>Percent of Jurisdictions increasing</i>	<i>Percent of jurisdictions decreasing</i>
Minimum house size (sqf) (n=102)	11%	9%
Street width (n=105)	5%	16%
Building setbacks (n=102)	23%	16%
Minimum lot size (n=106)	26%	22%
House types (n=102)	26%	1%
Multi-family zones (n=103)	25%	9%

Table 33
Regional Distribution of Specification Changes

<i>Type of change</i>	<i>Number of Jurisdictions Northeast</i>	<i>Number of Jurisdictions South</i>	<i>Number of Jurisdictions Midwest</i>	<i>Number of Jurisdictions West</i>
Reduce Lot Size	1	7	5	11
Reduce Setbacks	2	6	4	4
Reduce Street Width	2	4	3	8
Reduce House Size	2	2	3	2
Increase House Types	4	9	3	6
Increase Multi-family zones	4	7	5	10

Alternative Developments-

Planned Units, Traditional Neighborhoods, Conservation, and Others

In the 1960s, planners and public officials increasingly criticized conventional forms of subdivision development. Their failure to provide for innovative design and planning solutions, together with increased criticism over cost and waste of resources, led planning authorities to search for more flexible and inclusive approaches to design and development approval.

Permitting developers to optimize the use of land by clustering units and preserving natural amenities, as well as putting into place legal provisions to approve such developments, became a wide-spread phenomenon. These new Planned Residential Development (PRD) or Planned Unit Development (PUD) zones, allowed local jurisdictions to favorably review and approve changes to typical subdivision standards. Building setbacks, lot sizes, street widths and density measures were then measured and reviewed in terms of whole projects rather than by a given location or acreage. These forms of developments offered more open space, recreational amenities and in many cases increased densities and housing forms.

These new forms of residential development with its unconventional physical standards, housing types and open space created a need for an appropriate governing vehicle capable of maintaining and administrating the numerous common facilities. Often with the support of local jurisdictions, which are reluctant to maintain and administer these areas, developers dedicated the common property and facilities to homeowners' associations.

Whether taking the form of typical PUDs, cluster developments, or the more contemporary Traditional Neighborhood Developments (TNDs) and Conservation Subdivisions, these types of communities have become a significant phenomenon in subdivision development. Indeed almost all of the jurisdictions surveyed (86 percent or 137 jurisdictions) have an ordinance for alternative development approval in place. Out of these 137 jurisdictions, only 10 (6 percent) also have a TND ordinance, with 7 out of these 10 jurisdictions located in the South.

Although the majority of jurisdictions have the mechanism to approve alternative developments such as PUDs, only 57 percent of the jurisdictions surveyed have actually built one. Table 34 shows the distribution of jurisdictions that constructed 10 or more such developments. As can be seen in the table, these tend to be concentrated in the West, probably due to the large size of their development parcels and the availability of undeveloped land.

Table 34
Percent of Jurisdictions With More Than 10 Alternative Subdivisions
(PUDs, TNDs, etc.) Constructed

<i>Region</i>	<i>Percent Jurisdictions with 10 or more alternative developments</i>
Northeast (n=35)	13%
Midwest (n=48)	58%
South (n=43)	60%
West (n=33)	87%

The majority of public officials acknowledged the benefits associated with PUDs and TNDs. Particular advantage is seen in allowing the clustering of units, introducing a variety of housing types, and increasing densities. (Table 35) Less consistent agreement exists for the benefits associated with the approval process. Forty-four percent of public officials indicate approval time is about the same for these developments as it is for

conventional ones, while 39 percent indicated that it takes longer, mainly due to the complexity of negotiations. However both public officials and developers agree that introducing design alternatives, such as overall physical layouts and street patterns, PUDs provide straightforward alternatives compared to variances and zoning relief.

Table 35
PUDs' Benefits

<i>PUDs' Benefits</i>	<i>Percent of public officials responding (n=156)</i>
Encourage clustering	83%
Permit different housing types	63%
Permit greater densities	52%
Permit staged platting	51%

Common Interest Communities

The last part of the twentieth century witnessed the record growth of private residential communities. Collectively referred to as Common Interest Communities (CIC) or Common Interest Development (CID), these communities rely on Covenants, Conditions and Restrictions (CC&R) to privately govern and control land use and design decisions, services, and social conduct. The communities own, operate and manage the residential property within their boundaries, including open space, parking, recreational facilities, and streets. Although historically the affluent lived in common interest developments, they are now the dominant thrust of suburban and urban residential development. Condominiums, cooperatives, single and multi-family homes, gated and non-gated private communities are spreading, nationally and internationally, across diverse economic and social classes.

Growing from 500 various neighborhood associations in the 1960s to an estimated 231,000 in 1999, homeowner associations are forming at a rate of 8,000 to 10,000 each year, and constitute almost 15 percent of the national housing stock. About 60 percent of the total 231,000 communities are homeowner associations, around 30 percent are condominiums, and 10 percent are co-operatives. (Community Associations Institute, 2003) In the fifty largest metropolitan areas, more than half of all new housing is marketed with neighborhood associations as their governing body. In California, and particularly in the Los Angeles and San Diego metropolitan areas, this figure exceeds 60 percent. (Treese, 1999)

The proliferation of CIC and privately owned and managed residential developments are widely used by the jurisdictions surveyed. Eighty-four percent or 130 jurisdictions allow

privately owned developments to be built. Out of these 130 jurisdictions, 63 (43 percent) have constructed 10 or more private developments in the last five years. Similarly, developers see these developments not only as responding to market demands and trends, but also as a way to introduce planning and design concepts that are often not allowed or are difficult to get authorized under existing regulations and the typical approval process.

Many public officials acknowledge the particular design benefits associated with privately owned development. Fifty-seven percent feel that many private developments are introducing innovative design in the form of building arrangements and the encouragement of unit clustering. Forty-one percent report that such developments permit the introduction of housing types not found in other developments within their communities, and 61 percent indicate that private developments allow for the incorporation of narrower streets. It is interesting to note that the perception about private development is relatively consistent among both public officials and developers. (Table 36)

Table 36
Perception of Private Development Design Characteristics

<i>Residential Private Development Characteristics</i>	<i>Percent of Developers indicating</i>	<i>Percent of Public Officials indicating</i>
Encourages housing clusters	42%	49%
Permits greater density	25%	26%
Permits housing types not found elsewhere	37%	41%
Allows narrower streets	49%	61%
Allows innovative design	67%	57%

While public officials recognize the benefit of private developments in pushing the design envelop within the boundaries of the development itself, many are also concerned about the social implications and impacts of these developments on their surrounding communities. As one official writes: “As a matter of policy, gated communities are discouraged as they are not in keeping with the urban form which calls for an interconnecting network of vehicular and pedestrian movement. In addition, the walling of neighborhoods from arterial roadways should be avoided by alternatives such as the placement of other compatible uses along the periphery.”

Although almost all of the jurisdictions (82.5 percent) require private developments to follow established subdivision regulations, the enforcement of these standards through

the approval process is malleable. In some cases, when such a development is classified as a condominium, which may include attached and/or detached dwelling units, no formal review of street standards is required. In fact, the majority of jurisdictions surveyed (61 percent) allow for the construction of narrower streets within private developments. As indicated by one of the respondents: “Variances are more easily granted within private road systems since the county will not have any maintenance responsibility or liability. A developer for such a community may obtain waivers to reduce and/or eliminate some design/construction requirements (e.g., tighter radii, unusual landscape islands, sub-base thickness, pavement thickness, etc.). The local jurisdiction is willing to grant some of the requested waivers as the ownership/maintenance responsibility for the improvements will not be the dedicated obligation of the jurisdiction.”

The last decade brought wide acceptance for the practice of constructing narrower roadways and smaller building setbacks within private developments. A street standards survey completed in 1995 showed that 84 percent of the cities polled allow for different street standards in such developments, and more readily accepted the introduction of different paving materials, changes in street configurations, and the employment of traffic calming devices.(Ben-Joseph 1995)

The proliferation of Common Interest Communities, and their ability to plan, design and govern outside of the public sphere, may be a compelling indicator of a failed public system. When developers and planners resort to privatization in order to achieve a more responsive design, and when local jurisdictions acknowledge privatized communities provide an easier way to grant variations and innovation, existing conventional parameters need to be reconsidered. Public officials should realize the double approach to development concede the inadequacy of standards applied to more typical subdivisions. This realization could pave the way for incorporating regulations and codes that better fit the reality of the public’s preferences expressed in the housing market.

Growth and Environment Control Measures

The consequences of urban growth and environmental degradation have been at the center of the political and professional planning agenda for the last three decades. From the national to the local level, governments have introduced various measures and mechanisms to control and amend growth’s undesired consequences. Although such measures address wider aspects of urban development, many have a direct impact on subdivision design and construction.

An overwhelming majority of the surveyed jurisdictions (93 percent) indicated that growth concerns are an issue in their community. When asked to list the major issues with regard to growth, 48 percent indicate concern for the ability to control and provide municipal services, 44.5 percent mention apprehension about the ability to maintain the existing character of the community, and 18 percent indicate worries about environmental degradation. (Table 37)

Table 37
Top Three Concerns about Urban Growth

<i>Growth Concerns</i>	<i>Percent of Jurisdictions (n=155)</i>
Control of municipal services cost	48%
Preserve the character of the community	44.5%
Environmental; degradation	18%

Unexpectedly, amplified concerns over the impact of urban growth do not necessarily translate to action. As mentioned by one respondent: “There is no political support for real planning. The politicians believe planning is issuing permits. They continue to approve everything, especially huge subdivisions on two lane county roads. We are the poster boy of sprawl.”

Only 28 percent (42 jurisdictions) have enacted at least one growth control measure. Out of a variety of measures, the adequate public facilities ordinance is the most widely used. Under this regulation, development cannot be approved if existing public facilities such as schools, police, fire services, or infrastructure are deemed insufficient to serve increased demands. (Table 38) When distributed regionally, 36 percent of the jurisdictions in the South, and 34 percent of the jurisdictions in the West have enacted at least one growth control measure. (Table 39)

Table 38
Growth Control Measures Enacted

<i>Growth Control Measure</i>	<i>Number of Jurisdictions Enacting</i>
Adequate public facilities ordinance	25
Phased development controls	16
Interim zoning restrictions	12
Sewer Moratorium	11
Absolute limit on annual permits	10
Others (growth control boundary, urban service area, building moratorium, etc.)	15

Note: Some jurisdictions have enacted more than one growth control measure

Table 39
Distribution of Jurisdictions Enacting Growth Control Measures within Each Region

<i>Region</i>	<i>Percent of Jurisdictions Enacting Growth Control Measures</i>
Northeast (n=30)	23%
South (n=42)	36%
Midwest (n=45)	20%
West (n=32)	34%

The developers' responses reveal a greater perception of the prominence of growth control measures. Almost 60 percent of developers (45 out of 79 or 57 percent) indicate that they have encountered this particular type of restriction. Over half of the developers have encountered ordinances which phase developments or tie developments to adequate public facilities. In comparison to the 1976 survey, overall growth control measures and their impacts are on the rise. (Table 40)

Table 40
Developers' Experience with Growth Control Ordinances 1976 -2002

<i>Type of Growth control</i>	<i>Percent of Developers Reporting* 1976 (n=196)</i>	<i>Percent of Developers Reporting* 2002 (n=79)</i>
Absolute limit on annual permits	6%	40%
Phased development controls/Adequate public facilities	32%	51%
Sewer moratorium	49%	38%
Interim zoning restrictions	NA	49%

*Several respondents indicated more than one type of ordinance -1976 data from Seidel

When distributed in relation to the level of median family income for each municipality, none of the low income communities had a growth control measure in place, while almost 40% of both middle and high income communities implemented at least one. Does this indicate exclusionary tactics by higher income communities, or is this purely coincidental? These questions deserve further research and study. (Table 41)

Table 41
Growth Control Measures by Income of Jurisdiction

<i>Median Income of Jurisdiction</i>	<i>Percent of Jurisdictions implementing Growth Control Measures (at least one)</i>	<i>Percent of Jurisdictions implementing No Growth Control Measures</i>
Low (n=10)	0%	100%
Moderate (n=74)	24%	76%
Middle (n=51)	41%	59%
High (n=14)	21%	79%

An array of environmental codes and regulations have resulted from an increased recognition of the need to protect natural resources and the integrity of ecological systems. For example, states and localities may require development to adhere to flood plain and wetlands regulations, erosion and sedimentation controls, watershed protection, etc. Although these regulations do not rely on one common standard or one level of enforcement, many depend on the Environmental Impact Statement (EIS) as an acceptable apparatus.

The National Environmental Protection Act (NEPA) of 1969 included the basis for the EIS. Although the original act applied to federal actions or legislations, it has served as a model for many states and local jurisdictions. Indeed, the extent to which EIS is required at the local level is reported in Table 42. When developers were asked to indicate the percentage of their residential projects which required an EIS to be filed in the last three years, 28 percent stated that they had to file in more than 75 percent of their projects. A comparison to the 1974-1976 data shows a steady increase in the number of EIS filed. The rate of no required EIS case filing fell from 65 percent in 1974-1976 to 40 percent in 1999-2002.

The influence of EIS is also evident in the degree of amendment or change to submitted development plans because of the environmental review process. Only 20 percent of the developers who went through an EIS did not have to make any changes to their plans, while 80 percent had to make some. This number is higher than the 11 percent of developers who indicated no change in the 1976 survey. On the other hand, the number of developers in 2002 indicating a change after an EIS review is 14 percent, substantially lower than the 33 percent of developers reporting in 1976. This may indicate a greater proficiency and understanding of environmental requirements by developers and their consultants, and their ability to generate acceptable plans beforehand. (Table 43)

Table 42
Residential Projects Requiring an Environmental Impact Statement

<i>Percent of total residential development Requiring EIS</i>	<i>1974-1976 Percent of developers filing for EIS (n=384)</i>	<i>1999-2002 Percent of developers filing for EIS (n=74)</i>
None	65%	40%
1 to 25%	10%	8%
26 to 50%	6%	15%
51 to 75%	4%	9%
76 to 100%	15%	28%

Table 43
EIS Related Changes in Development Plans

<i>Action</i>	<i>1976 Percent of developers (n=133)</i>	<i>2002 Percent of developers (n=70)</i>
Before EIS review	16%	16%
After EIS review	31%	14%
Both before and after	42%	55%
No change to project	11%	20%

For those developers who have changed their plans as a result of an EIS, the most commonly cited adjustments are site planning issues and densities. Adding more open space to the development was reported by almost 70 percent of the respondents, and 61 percent indicate changing the location of the buildings on the lots. Unlike the 1976 results, almost half of the developers in 2002 also cited changes relating to the structures themselves. These changes include reductions of proposed floor to area ratios, size of building coverage on the lot, and the requirement for energy efficient materials. (Table 44)

EIS and other forms of environmental regulations have become a major consideration in residential development. Although most would agree that these regulations assure the reduction of devastating impacts on the environment by proposed developments, questions remain about other consequences. How much do EIS and other environmental regulations increase delays and costs? How efficient are EIS in considering the wider aspects of the community and the region? How much do the required changes such as adding open space and lower densities as cited by developers, act as a disincentive for the construction of affordable housing?

Table 44
Type of Changes Required by EIS Review

<i>Design Change</i>	<i>1976 Percent of developers *</i>	<i>2002 Percent of developers*</i>
Project termination or relocation	0%	4%
Reduction in dwelling unit densities	59.5%	61%
Additional open space	48%	67%
Change of structure placement on the lot	54%	61%
Design change in structure	0%	49%
Additional sewage capacity	31%	35.5%

*Will not add to 100 percent due to multiple responses.

Conclusions and Recommendations

The maze of codes, regulations and design requirements placed on residential developments have caused contention between developers and public officials. At the core of this friction may be the simple fact that many subdivision requirements imposed today have little to do with the rationale that shaped them at the turn of the 20th century. Health and safety concerns caused by inadequate building and infrastructure construction, premature subdivision of the land resulting in conflicting property lines and neighborhood layouts, and builders who were not concerned about their reputation, have hardly any bearing on present day reality.

Regardless of the numerous calls for regulatory reform, changes to subdivision controls have been slow. Standards and codes that dictate the shape and form of our public built environment have remained almost unaffected. As evident in both our survey and Seidel's of 1976, government imposed regulations, and particularly subdivision controls, have been a central and growing problem for the housing industry.

Developers in both 1976 and 2002 felt that subdivision standards and zoning regulations both increased the cost of the homes they built and decreased densities. In many instances these regulations pushed developers to build in greenfield locations, away from major urban areas, where restrictions and abutters' objections may be less restrictive. When asked indicate the type of changes in regulations they apply for, many developers' responses suggest that they want to build higher density single family areas and more multi-family units. They would also create more varied site and structural plans if they had the opportunity. These trends have remained consistent in the last 25 years.

In the instances when our study examined the universe of various regulations in relation to the median income of the communities surveyed, results show that approval of development takes longer in higher than lower income communities. Higher income communities provide fewer options for performance guarantees, require higher dedication of open space from the developer, and more often implement growth control measures. Although the sample is relatively small, such indications suggest that exclusionary tactics in these higher income communities may be more prevalent than is often assumed. A recent study by Euchner (2003) shows two progressive Massachusetts' laws, Chapter 40B—the Comprehensive Permit Law or “anti-snob zoning” law, and the Community Preservation Act, both which aim to give developers and communities tools to build affordable housing, have actually become instruments for anti-housing sentiments and actions.

With such conditions, change is unlikely to happen through traditional means, but rather by outliers and renegades. Indeed, in the last decade almost all innovation in subdivision design has evolved within the private domain and under the governance of community associations. Two such innovations, New Urbanism and Conservation (or green) Subdivisions would not have been possible if it were not for early prototypes such as Seaside, Fla. and Prairie Crossing, Ill. Communities that were built as common interest developments are privately owned and maintained by Home Owners Associations.

Renegades such as these often serve as catalysts in changing subdivision standards and regulations. At the national level, several professional associations have endorsed local adjustments of fixed national standards. The Institute of Transportation Engineers (ITE), for example, has reexamined their street standards and recently even endorsed design practices that are not rooted in prescriptive numerical specifications.³ The American Planning Association, in a major effort to provide new direction, has recently published its *Growing Smart Legislative Guidebook: Model Statutes for Planning and the Management of Change* (2002). Its executive director acknowledges that: “it's time we develop new and more flexible codes that can serve all citizens far more effectively than their 20th century predecessors.” (Pierce, 2003)

In order to defuse innovation and encourage change in subdivisions' design and planning, public officials together with agents of the housing industry must move beyond confrontation into joint association. Based on our study, the following recommendations may be of potential interest to both sectors.

Study Impact of Specific Regulations on Practices

- It is imperative to scrutinize the impacts on the construction of higher density developments and moderately priced housing of existing land use laws and regulations.
- States should evaluate federal land use policies, such as those associated with environmental regulations that hinder design changes to subdivisions' patterns, form and density.
- It is essential to continue studying and documenting the impact of engineering standards and codes on residential developments forms and housing costs, such as those relating to streets' widths, ROW and building setbacks.

Subdivision Planning, Practices, and Tools – Streamlining the Process

- It is necessary for states to address and provide mechanisms that effectively address regional needs such as schools, open land and infrastructure, to allow development in one area to rely on the amenities of development in another, and avoid unnecessary duplication. Such measures will help eliminate unnecessary and costly improvement requirements from the developers and reduce shifting the cost to the consumer.
- The red tape and bureaucratic procedures associated with development approval at the local level is also the result of the involvement of multiple agencies and committees in the process. In order to eliminate delays and jurisdictional conflicts, localities should consider consolidating this process within one agency, and establish a uniform structure for appeals for review and approval by this sole agency.
- Innovative elements of an application should be assessed in the same time frame as standard applications.
- Introducing electronic permitting systems can also improve process streamlining. As internet use is spreading and becoming more available, the public increasingly expects to conduct their affairs from home or office with greater immediacy. From

automatic approval of plans, to equipping inspectors with portable devices for recording and inspecting, electronic permitting systems can provide better and more timely information to decision makers, and experts alike. The possibility for electronic plan review is particularly encouraging for its potential to automatically analyze a plan, and compare it with codes and standard requirements. Alternatively, such systems can allow the plan reviewer to enter various descriptors and benchmarks and let the software call up the applicable requirements for consideration. The process can ease the burden of subdivision planning and assure a certain consistency of performance for many towns with limited or no planning staff.

Envisioning Tools for Development

- In a climate of increased bureaucracy and complexity, decision-making and legislative changes occur slowly. However, actual examples of development best practices are an excellent catalyst for change. Best practices provide an immediate way to compare experiences and to evaluate projects based on actual performance. They are often the most effective tools to persuade skeptical decision-makers and the public. The ability to showcase achievements and alternative practices through media and marketing may prove to be the most important tool for change. Both public agencies and developers could devote more time to disseminating their experiences and successes and make them readily available in tangible form, such as in three-dimensional drawings or models.
- Public officials, representatives of the housing industry, and planning related organizations could re-focus on educating the public about the implications of continuing existing practices and the benefits of alternatively planned development. Emphasis ought to be made on the benefits of alternative design schemes that focus on density.
- The difficulty of visualizing the physical ramifications of land use and subdivision regulations is a barrier that must be overcome to achieve better design and planning. Putting into use powerful yet readily available computational tools to introduce public officials and communities to the variety of choices available will help them visualize the potential effects that these choices produce, and will ultimately diversify the spatial paradigm of development.
- Simple, interactive and tangible representations that visualize otherwise abstract standards can be integrated into the various regulatory procedures. Computerized, three-dimensional visualization can help those who are unable to conceptualize the spatial consequences of two-dimensional proposals. Comparisons can be made to existing adjacent parcels like complementing setback relationships and building massing. Variance requests can be viewed and evaluated graphically, as opposed to a written application.
- Promising new venues exist in the application and adaptations of new technologies that are web based and do not require a high level of computing. The Visual Interactive Code (VIC) TM, for example, is a computer-based internet system that enables local governments to convert land use regulations and planning data into a single visually based format using photographs, illustrations, and maps. By utilizing an easy and engaging graphic interface (pictures and data that correlate to one another

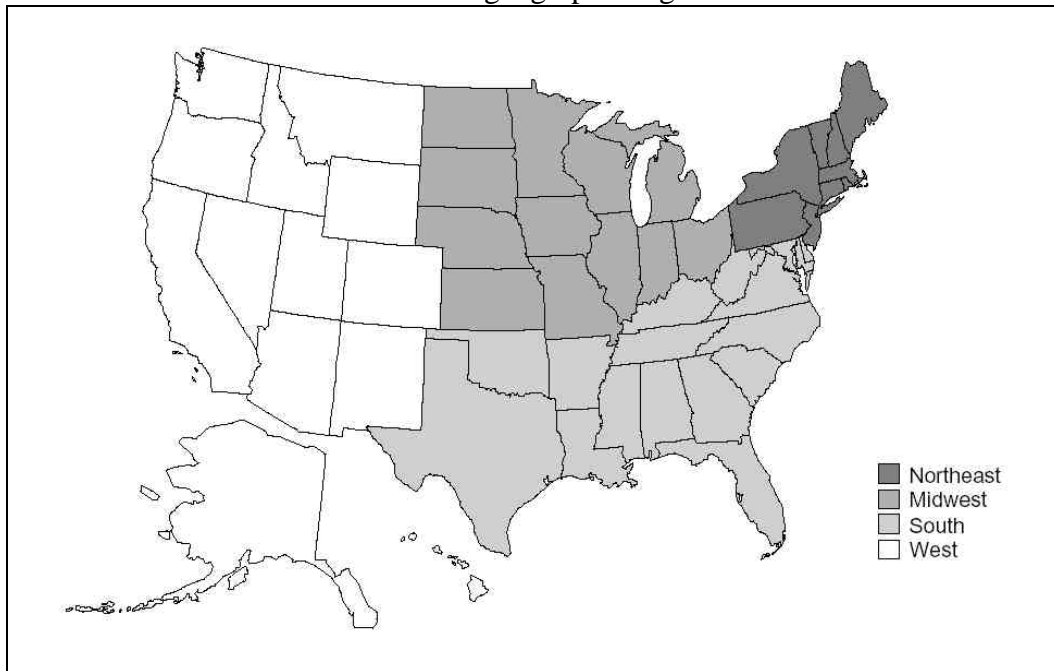
and are interchangeable), different effects of various regulations can be shown. With a click of a mouse, end users can view the configurations and layouts of various developments, density measurements, street widths and setbacks, as well as other related precedents.⁴

Appendixes

Appendix A: Case selection and sampling

Case selection was based on the U.S. Census Manufacturing and Construction Division (MCD) building permits data 1996-2000. For the purpose of the study, only single-family, low density development building permits were used since they best represent subdivisions. It is important to note that not all areas of the country require a building or zoning permit. The census statistics therefore, only represent those areas that do require a permit. The MCD data was collected according to four regions: Northeast, Midwest, South and West. Figure 8 shows the distribution of the states within these regions.

Figure 8
US census geographic regions



Jurisdiction Selection

The number of building permits issued for single family housing was the primary factor in selecting the jurisdiction samples. Our assumption was that jurisdictions issuing numerous building permits must deal the most with new subdivision construction and therefore face some of the greatest challenges posed by their regulations. We also assumed that this data would give us a reasonable indication of where most suburban growth is occurring.

Steps used:

1. U.S. Census data from 1996 to 2000 analyzed.
2. U.S. Census MSAs and CMSAs in the census' four geographical regions (Midwest, Northeast, West and South), were analyzed for the annual number of single family building permits issued.
3. The total number of permits issued for each jurisdiction in the five year period was tallied.
4. The top 125 jurisdictions in each region were selected.
5. A mail survey was sent on June 2002 to each jurisdiction asking the official responsible for administrating subdivision regulations to reply.

Figure 9
Single Home Building Permit Issued 1996-2000 Top 10 Jurisdictions in the Country
(source US Census)

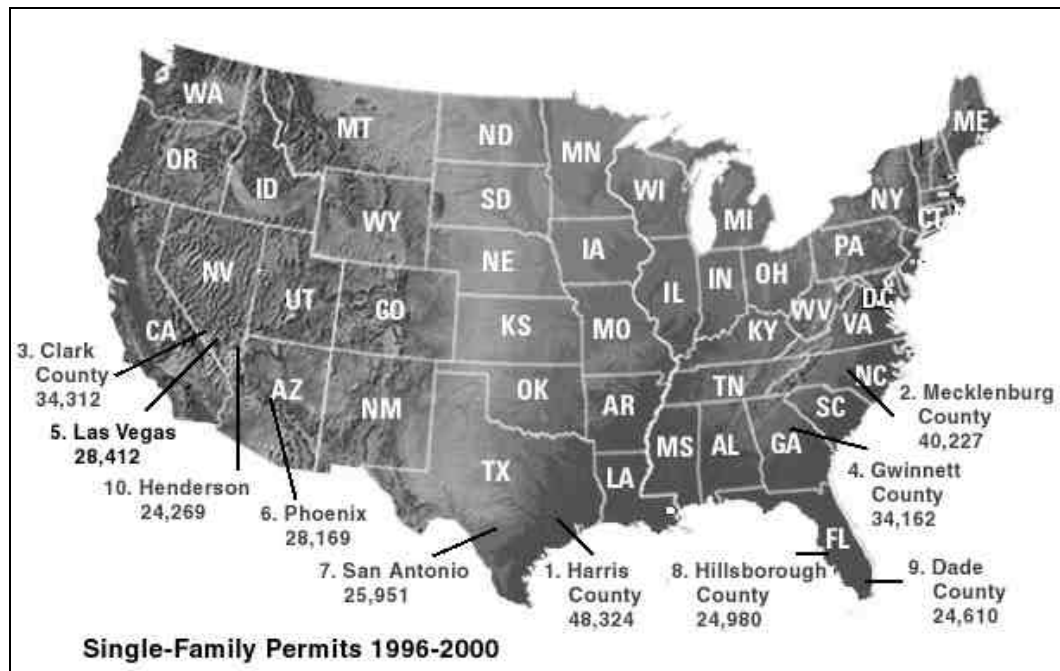


Table 45
Number of Single Family Building Permits Issued 1996 -2000
Top 10 Jurisdictions in Each Region
Source (US Census Data)

MIDWEST		
PLACE NAME	State	Total Permits
Indianapolis	Indiana	17,056
Columbus	Ohio	11,554
Omaha	Nebraska	8,791
Allen County	Indiana	8,040
Livingston County	Michigan	7,660
St. Louis County	Missouri	7,588
Macomb township	Michigan	7,517
Delaware County	Ohio	7,391
O'Fallon	Missouri	6,998
Joliet	Illinois	6,946
NORTHEAST		
PLACE NAME	State	Total Permits
Brookhaven	New York	7,557
Staten Island borough	New York	5,235
Adams County	Pennsylvania	2,944
Jackson township	New Jersey	2,876
Franklin County	Pennsylvania	2,826
Dover	New Jersey	2,794
Southampton	New York	2,605
Lakewood	New Jersey	2,478
Monroe	New Jersey	2,305
Marlboro	New Jersey	2,021
WEST		
PLACE NAME	State	Total Permits
Clark County	Nevada	34,312
Las Vegas	Nevada	28,412
Phoenix	Arizona	28,169
Henderson	Nevada	24,269
El Paso County	Colorado	21,490
Mesa	Arizona	19,560
Douglas County	Colorado	18,639
Gilbert town	Arizona	17,933
Maricopa County	Arizona	15,870
Albuquerque	New Mexico	15,089

SOUTH		
PLACE NAME	State	Total Permits
Harris County	Texas	48,324
Mecklenburg County	North Carolina	40,227
Gwinnett County	Georgia	34,162
San Antonio	Texas	25,951
Hillsborough County	Florida	24,980
Dade County	Florida	24,610
Orange County	Florida	23,993
Fairfax County	Virginia	21,281
Loudoun County	Virginia	19,919
Palm Beach County	Florida	19,589

Selection of Developers

Two data bases were used in selecting the developers' sample. A list obtained from the Urban Land Institute (ULI) provided the majority of the sample. This list was compared to data provided by Builder Magazine which annually lists the largest development corporations in the US. The magazine's information was tallied for the years 1996-2000 for a master list of the 288 largest development corporations. This list was incorporated with the general list provided by ULI. Although many of these corporations tend to across the nation, the assumption was made that their viewpoint should be included.

Steps used:

1. Developers' data was matched with the top jurisdictions for each geographical region as determined in phase 1.
2. 125 developers for each region were randomly selected, making sure that at least 25 of those were from the Builder Magazine list.
3. A mail survey was sent on July 2002 to each developer.

Survey distribution:

1. Public officials

- 500 questionnaires mailed (125 for each region). Total Received- 159
- Received per region:Midwest-30%, South- 27%, Northeast- 22%, West- 21%
- Response rate total = 31.8%

2. Developers

- 500 questionnaires mailed (125 for each region).
- Total Received- 86
- Received per region:Midwest-25%, South- 28%, Northeast- 23%, West- 24%
- Response rate- 17.2%

Appendix B: Characteristics of the Jurisdictions Surveyed

Table 46
Size of Jurisdictions Surveyed
(Data based on returns)

<i>Region</i>	<i>Average Population</i>	<i>Mean</i>
Northeast	45,191	32,500
Midwest	131,169	77,500
South	284,322	200,000
West	195,256	129,500
Overall	188,970	112,500

Table 47
Population Distribution of Jurisdictions
(Data based on returns)

<i>Population</i>	<i>Number of Jurisdictions</i>	<i>Percent of Total</i>
Up to 29,999	21	13
30,00-74,999	45	28
75,000-149,999	28	18
150,000-299,999	40	25
300,000 and above	25	16
Total	159	100

- Lowest Population: 10,700
- Highest Population: 1,100,000
- Median Population: 93,500

Table 48

Distribution of Jurisdictions by Median Family Income 2000
(Source US Census 2000)

<i>Population</i>	<i>Number of Jurisdictions</i>	<i>Percent of Total</i>
Low	12	8
Moderate	78	49
Middle	55	35
High	14	9
Total	159	100

- Low: up to \$39,999
- Moderate: \$40,000-\$59,999
- Middle: \$60,000 - \$79,999
- High: \$80,000 and above
- Lowest Median Family Income Jurisdiction: \$26,009
- Highest Median Family Income Jurisdiction: \$91,868
- Median Family Income Jurisdiction: \$56,080

Endnotes

¹ For a historical background on the evolution of subdivision regulations in the United States see Part 2, Chapter 1 in: David Listokin and Carole Walker, *The Subdivision and Site Plan Handbook*, Center for Urban Policy Research. New Jersey: Rutgers University. 1989.

² In Dallas, for example, amounts of water not returned to the ground annually range from 6.2 billion to 14.4 billion gallons, while in Atlanta the amounts can reach 132.8 billion gallons or enough water to supply the average daily household needs of 1.5 million to 3.6 million people per year. (American Rivers 2002)

³ For example in its 1999 *Traditional Neighborhood Development Street Design Guidelines*, instead of using dimensioning charts and specific design criteria, ITE explains concepts and their underlying logic. For example, the guidelines do not specify a required street width or the number of travel lanes, but emphasize that: “A street should be no wider than the minimum width needed to accommodate the usual vehicular mix that street will serve . . .” This simple statement means that a particular traveled surface may be as narrow as ten, twelve, or fewer feet in width. In other cases, streets may be as broad as sixty or more feet. If the principles of design and the balance of these guidelines are read and properly applied, appropriate dimensions will follow as a normal part of the design process for the street under consideration. (ITE Transportation Planning Council Committee 5P-8 Traditional Neighborhood Development Street Design Guidelines- an ITE Recommended Practice 1999, 5.) It is commendable to find such flexibility coming from an engineering discipline that often over-relies on prescriptive dimensions. The support and distribution of such a document will allow for variety in local street design that can only enhance this essential public domain and cater less to automobile use.

⁴ For examples see: <http://www.vicgroup.com/> and: <http://urban-advantage.com>

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