Subdivision Regulations:
Practices & Attitudes

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

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Abstract

This study gauges the impacts of subdivision regulations on the design of residential developments and the practices of developers in rapidly growing regions of the country. Through a nationwide survey of jurisdictions which are experiencing rapid development growth and developers who are working in these areas, the study assesses the attitudes and perceptions and identifies the issues within subdivision regulations that members of the housing industry and the regulatory agencies feel are affecting housing development. The study also partially replicates similar research done in 1976 to gain an understanding of changing practices within the last 25 years.

Research Findings:

- Government regulations are considered by developers in the housing industry as the most significant problem in doing business. This view has increased since 1976 despite numerous studies and governmental commissions calling for efficiency in the regulatory process.
- Subdivision approval process has not been streamlined. On the contrary, since 1976, the process has increased in its complexity, in the number of agencies involved, the numbers of delays in the approval process, and the adding of new requirements.
- Both in 1976 and in 2002 the area of regulation cited as containing the most unnecessary costs to the price of the unit is subdivision controls. The second area in 2002 is building codes, and the third is zoning.
- Street widths, land dedication and stormwater requirements are seen as excessive by most developers.
- Financing and costal zone regulations least affect cost increases.
- When various regulations are examined according to the median income of the communities surveyed, results show that in higher income communities, approval of development takes longer than for those with lower incomes, higher income communities provide less options for performance guarantees, require a higher dedication of open space from the developer, and generally are the ones to implement growth control measures. Such indications may suggest exclusionary tactics in these higher income communities may be more prevalent than what is often assumed.
- There is a strong disagreement between public officials and developers as to the length of time it takes to receive final approval for development. Still, results show that since the 1970s there has been a steady increase in approval and processing time.
- Public officials linked approval delays with the inability of developers to present adequate information. However, many also acknowledge that delays are also caused by the bureaucratic process related to multiple agency approval and understaffing.

- While in 1976 almost half of the surveyed developers rarely required regulation relief, (zoning relief or variances), in 2002 more than half required such a process at least half of the time.
- Most developers indicated that they want to build higher density single family areas and more multifamily units, and would create more varied site and structural plans if they had the opportunity. In the majority of cases, developers applied for more dense development, yet an overwhelming majority (72 percent) had to design a lower density development because of existing regulations. These observations have remained consistent in the last 25 years.
- Developers in both 1976 and 2002 felt that subdivision standards and zoning regulations increased the cost of homes they built and decreased densities. In many instances these regulations pushed developers to build in green-field locations, away from major urban areas, where restrictions and abutters' objections may be less restrictive.
- Whether taking the form of typical Planned Unit Developments, 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 in place an ordinance for alternative development approval. Out of these 137 jurisdictions, only 10 (6 percent) also have TND ordinance, with 7 out of these 10 jurisdictions located in the South.
- Developers see private developments governed by Home Owners Associations, gated and non-gated, 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 the typical approval process.
- An overwhelming majority of the surveyed jurisdictions (93 percent) indicated that growth concerns are an issue in their community. Yet, amplified concerns over the impact of urban growth do not necessarily translate to actions. Only 28 percent (42 jurisdictions) have enacted at least one growth control measure. Out of a variety of the control measures, the most widely used is the adequate public facilities ordinance. Under this regulation, development cannot be approved if existing public facilities such as schools, police, fire services, or infrastructure, are deemed insufficient to serve the increased demands.

About The Author

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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, there is little agreement 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 practice. To them some regulations are seen 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 have often met with reluctance 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 promoter and protectors of regulations. From their perspective, regulations, particularly subdivision controls, are a central instrument in planning practice and the primary mechanism in ensuring minimal 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 before, 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), attempt 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 that are experiencing rapid urbanization, issues that might otherwise be unattainable by reading the regulations themselves can be identified. 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 being 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 analysis 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 initially, 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 provide 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 questionnaire soliciting response for 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 almost even distribution between the various regions.

Organization

The first section 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 perception about physical improvements and site development standards. The next section surveys various changes to requirements as well as applications for relief. It also covers various practices and attitudes regarding alternative subdivisions developments such as Planned Unit Developments and private, common interest communities, and the impacts of growth and environmental controls measures.

Regulatory Perception

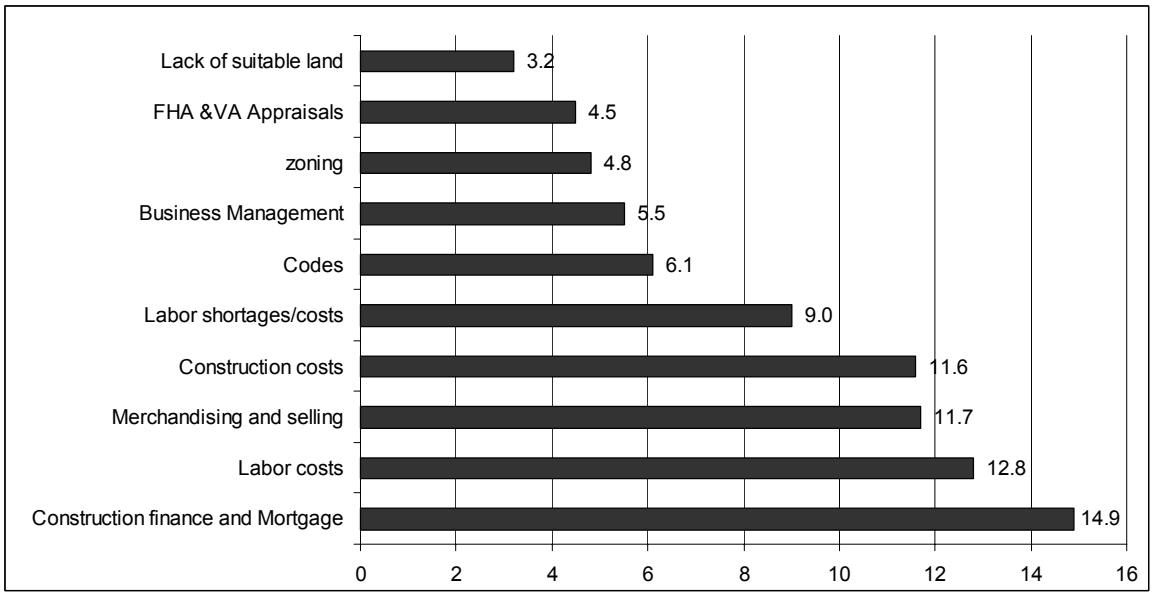
When and to what extent have government regulations become a burden on the housing industry? Are regulations blamed for the ills and problems of executing efficient developments? What are the current perceptions about regulations? and how are they changing over time?

Two surveys completed by the National Association of Home Builders in the 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 was seen as 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 being 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 problem of the industry. According to Seidel, in 1976, 78 percent of respondents choose government imposed regulations as a problematic issue in doing business. Problems in obtaining financial help and mortgages were chosen by more than half of the respondents. By 2002, financial issues completely disappear, while imposed regulations and the availability of suitable land for development continue to dominate as the main triggers of hardship.

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 can also be seen 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 (compare to a total score of 30.0 for the 1976 results). (Table 1 and Figure 2)

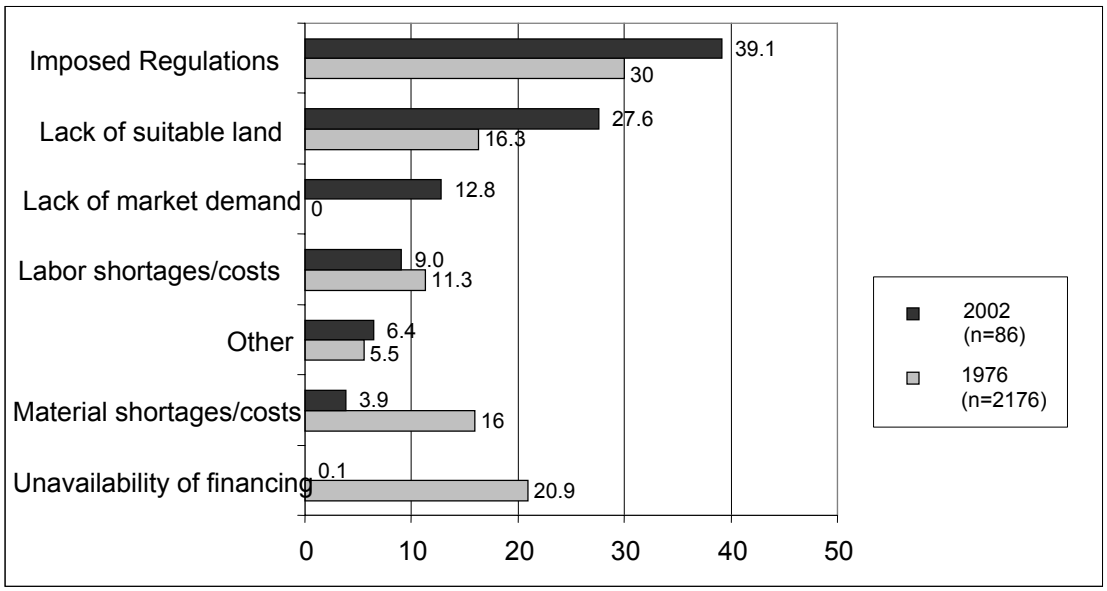
Table 1

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

Rank	Percent of developers *1976* *(n=2176)*		Percent of developers *2002* *(n=86)*	
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 discretions and unnecessary delays. Both of these aspects were cited by over 25 percent of the respondents, these trends continue in 2002. Burdensome aspects of regulations still center on issues of government bureaucracy, discretion, and organization. Unnecessary delays and individual vacillations are cited by over 23 percent of the respondents with lack of coordination among government regulatory agencies in close third (22 percent). (Table 2)

These figures are also reflected in the frequently repeat 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 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)

Aspect of Regulation	*Percent Developers 1976 (n=2150)*	*Percent Developers 2002 (n=84)*
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 constant 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

Aspect of Regulation	*West (n=20)*	*Midwest (n=22)*	*Northeast (n=19)*	*South (n=23)*
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

Regulation impacting development location	*1976 (n=2239)*	*2002 (n=85)*
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 it is the West (81 percent) and the South (75 percent) where regulation poses the greatest impact on location decisions. (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 than no less than 321 codes of federal regulations affect the building process. (NIBS

1979, 3-11) The same study also points to the growing numbers of organization involved in the process of regulations. 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

Region	*Not a consideration*	*Considered Somewhat*	*An important consideration*
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 more than 5 percent increase of the final selling price. Comparing the results to 1976 it is evident that developers continue to view subdivision regulations and building codes as a major problem and a source for increases in housing costs. (Table 6)

While in comparison to the 1976 study, the impact of subdivision regulations on cost has somewhat declined, 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 the funding and mortgage structure since the 1970s, relying more on private banking than government institutions. Costal 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 the units by more than 5 percent.

Table 6

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

Type of Regulation	*Percent Developers see an increase of unit cost by more than 5% 1976 (n=2471)*	*Percent Developers see an increase of unit cost by more than 5% 2002 (n=83)*
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 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 regulation are of particular concern when higher income communities utilize various ordinances in order to prevent lower income or affordable housing from being introduced 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 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 what is often assumed.

Table 7

Growth Control Measures by Income of Jurisdiction

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

Results of the surveys 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 two most burdensome aspects of regulation seen by the housing industry are local administrative discretion and the lack of coordination among the 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 notion that regulations are often a barrier to affordable housing, and are used as an exclusionary device by higher income communities are substantiated by the surveys results.

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, permitting the recording of plats of land by dividing it 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 acts of subdividing the land. Premature subdivision created an oversupply, leading to the instability, and ultimate deflation, of property values. Depreciation of economic value led to 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.

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 groundwork by which federal, state, and local governments established zoning and subdivision regulations in the following years.

World War I gave planners and architects a chance 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 were 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 had a major boost at the end of World War I. 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 trying to recognize the importance of providing for planning control at the local level, and trying to address the problems created by land speculation

and premature subdivision development, published in 1928 the Standard City Planning Enabling Act (SCPEA). In addition to serving as a tool for recording and conveying property, an emphasis was also given to onsite improvements needed to support the demands created by the new subdivision. Road layouts block sizes and lots, sidewalks, and drainage facilities were addressed as a way to assure minimum standards of construction, livability as well control of development itself.

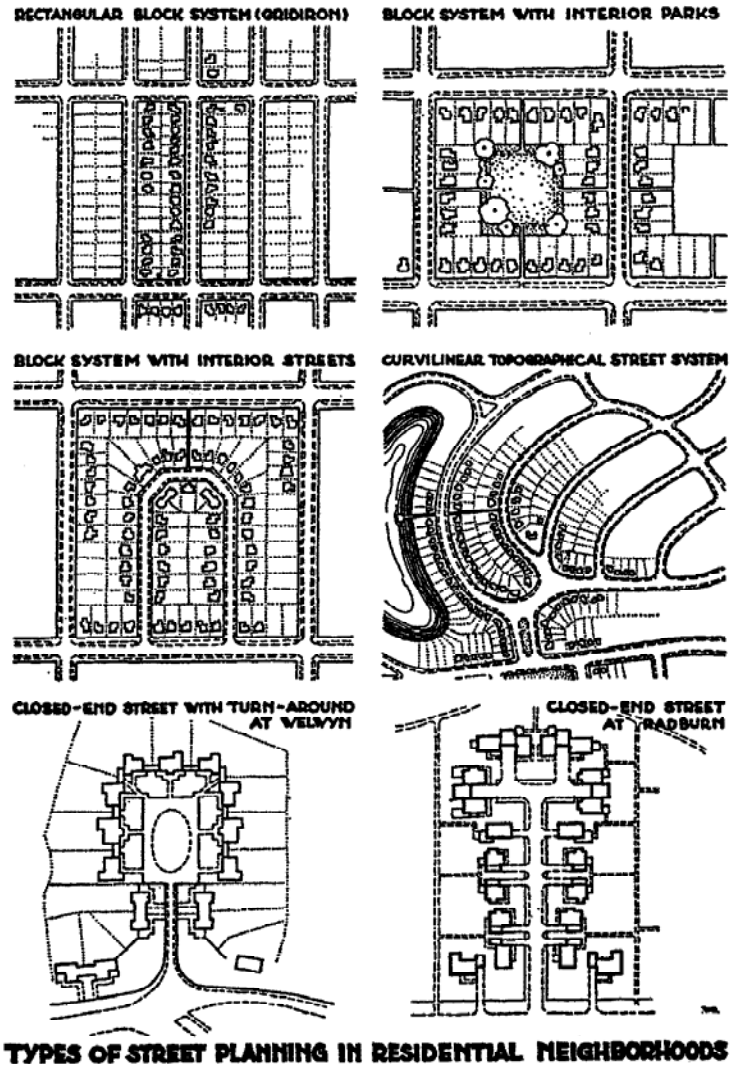
The acceptance of the residential neighborhood, or subdivision as a special entity that needed to be protected and deliberately planned for was reiterated in various conferences of the time. In 1932, for example, the Hoover administration called for a special President's Conference on Home Building and Home Ownership. More than 3,700 experts on aspects of home finance, taxation, and planning of residential districts formed committees and put forward various recommendations. Some of 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 that 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 in 1936 through the National Resource Committee the Model Subdivision Regulations. By 1941 thirty-two States had passed legislation granting power of subdivision control through the establishment of local planning commissions. Through an exercise of legislative "police power" by the state, the right of a landowner to sell property could be withheld until approval 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)



An example of such typical law a can be seen in the following 1953 Massachusetts example which states in part:

> ... 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 justification for government imposition of subdivision controls is rooted 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 can be seen 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)

Prolonged administrative and approval process required in the administration of subdivision regulations does not only increase the financial risk for the investor/developer but also increase the cost to the home buyer. According to Seidel, for every additional month added to the completion date, there is a 1-2 percent increase in the final selling price of the unit. (Seidel 1978, 32) With our survey indicating a steady increase over the last 25 years in the average time it takes to receive subdivision approval the increase in cost has undoubtedly been transferred 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 being practiced and enforced? How are they being viewed by those who administer them and those who must abide by them?

Our survey of public officials and developers provides some of the 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

Subdivision developments in the United States continue to grow at 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 were 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)

Region	*Less than 6 dwelling units*	*6-25 dwelling units*	*26-50 dwelling units*	*More than 50 dwelling units*
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 have been largely based on standards established by the Federal Housing Administration (FHA) in the late 1930s and early 1940s (Housing and Home Finance Agency 1952). These are based on 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. Final plat is then submitted for final approval. Once the planning commission approves the final plat, recording of the new plats as well as actual development begins.

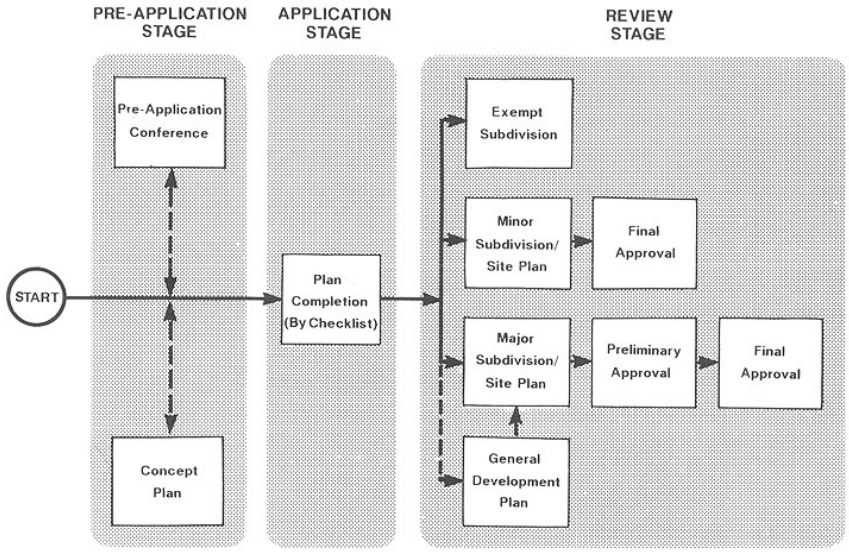
While the original FHA guidelines seem simple and straight forward, the realities of the last decades are those of growing complexity and frustration of those involved in the process. Indicative of these frustrations is the following statement by the Urban Land Institute: "American developers of housing 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 an Walker 1989, 177)

As a result, various task forces offered solutions and recommended models to expedite the approval process. Most suggests 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 as 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: By Listokin And Walker)



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

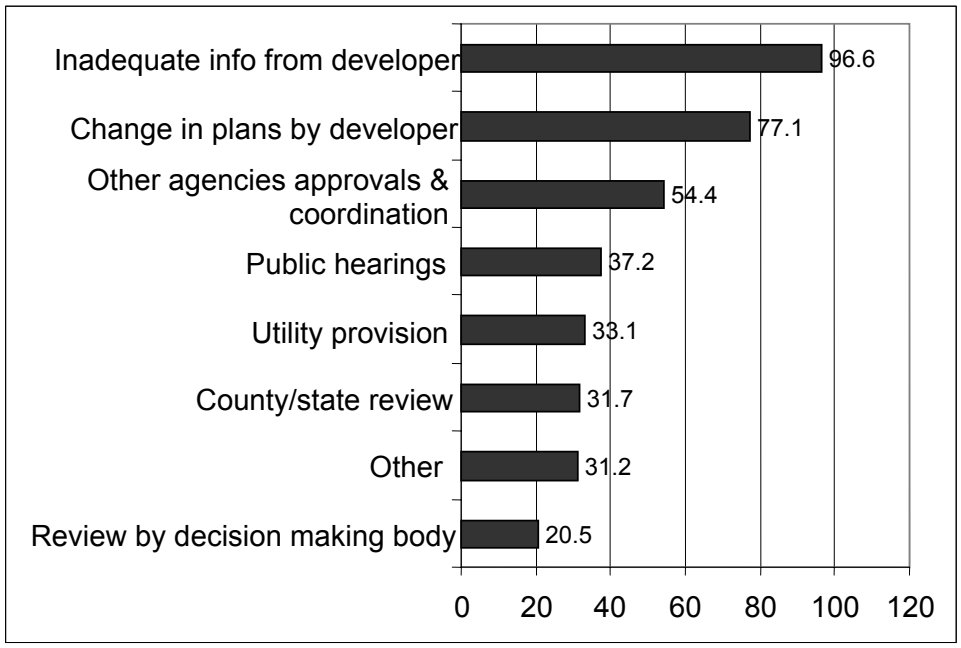
Table 9

Steps Required in the Approval Process
(n=157)

Steps	*Percent of Jurisdictions requiring*
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 there is 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 indicated higher blame for delays on government and public procedures. (Table 10)

The proliferation of various agencies involved in the subdivision approval process is another indication for increased bureaucracy and red tape. Public officials surveyed indicated that in more than 40 percent of the cases 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)

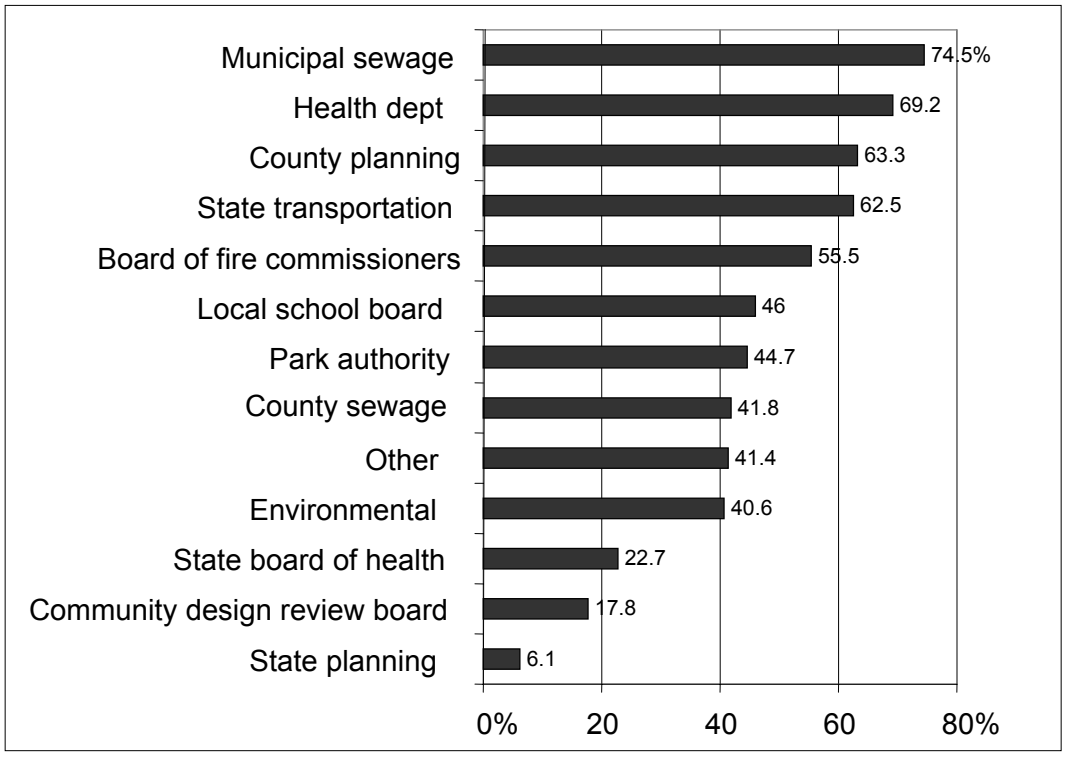
Table 10

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

Reason for delays	*Percent Respondents Northeast (n=35)*	*Percent Respondents South (n=43)*	*Percent Respondents Midwest (n=48)*	*Percent Respondents West (n=33)*
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%
City 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)



Time and Delays in the approval process

Delays and prolonged approval process are not only prohibitive to a developer, but also carry consequences of cost to the consumer. In most jurisdictions surveyed (42 percent), the average time period between initial submission of a (typical) subdivision application and tentative (or preliminary) approval is 2 to 4 months. In 34 percent of the cases, approval takes less than two months. Although these numbers indicate an efficient turnaround, it should be noted that overall there is some decline in efficiency as compare to the 1976 survey. For example, in 1976 half of the jurisdictions surveyed approved preliminary plat in less than 2 months, 46.7 percent approved rezoning in less than two months, and 32.9 percent approved variances or special relief in less than one month. In 2002 only 27.2 percent of the jurisdictions surveyed were able to grant rezoning in less than two months and only 14.2 percent allow for variances. (Table11)

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 the majority of jurisdictions (34.4 percent) and in the Northeast (46.9 percent) of the jurisdictions approve preliminary plats within 2-4 months.

Table11

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

Procedure	*Time Required*	*Percent of Municipalities 1976*	*Percent of Municipalities 2002*
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	5.3	9.5
	Total	100.0	100.0
		(n=78)	(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	2.5	4.7
	Total	100.0	100.0
		(n=74)	(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	13.3	31.4
	Total	100.0	100.0
		(n=74)	(n=157)

Unlike the public officials, developers reported very different estimates on the time it takes to obtain approvals. According to the developers surveyed, it took on average 17 months 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 between 13 to 24 months. The percentage of developers indicating that they received all approvals in less than 7 months declined in 2002 by almost half in comparison to 1976. Furthermore the number of those reporting it took over two years to get approvals, doubled in 2002 to 20.5 percent. (Table 12)

Discrepancies can also be seen 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. 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

	Less than 7 months	*7-12 months*	*13-24 months*	*More than 24 months*
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

Procedure	*Time Required*	*Percent of Developers 2002 (n=80)*
Variance or special exception	Less than one month	0
	1-2 months	28.6
	3-4 months	32.9
	more than 4 months	38.5
	Total	100.0
Rezoning	Less than one month	0
	1-2 months	6.8
	3-4 months	23.3
	more than 4 months	69.9
	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 attributed to the frequency and length of time by which special variances and zoning relief are being processed and approved. As noted in Table 5, most public officials indicated that when such measures have to be taken, 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. Above 80 percent of these jurisdictions approve subdivisions in less than 5 months as compare 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

Jurisdiction by income	*less than 5 month*	*5-10 month*	*more than 10*	*Total*
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 is seen by developers as a major undertaking in subdivision approval process. Administrative delays associated with such adjustments, and the need to face various local boards and planning commissions does 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 ¾th 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

Percent of time applied for zoning relief or variances	*Percent developers 1976 (n= 361)*	*Percent developers 2002 (n=85)*
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 they want to build higher density single family areas and more multifamily units, and would 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 more dense development and that an overwhelming majority (72 percent) had to design lower density developments because of existing regulations. These affects have remained consistent in the last 25 years as can be seen in Table 16.

Such findings should alarm individuals dealing with housing reforms, and those who as early as the 1970s, warned of consequences of various exclusionary devices. Restrictions against higher density developments, multiple housing types, minimum lot sizes and floor areas are still impacting 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 green-fields location, away from major urban areas, where restrictions and abutters' objections may be less restrictive.

Table 16

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

Type of Relief	*Percent Developers Responding (n=86)*
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

Affect	*1976 Percent developers responding (n=378)*	*2002 Percent developers responding (n=86)*
Build in less populated Areas	41%	38.5%
Build more expensive units	61%	61%
Build less dense development	62.5%	72%

Negotiations

Negotiations between developers and local jurisdictions can result in delays and increases in costs, as well as 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). On the other hand, issues with direct impact on the development site, such as infrastructure, tend to be less contended by developers. (Table 18)

Developers are generally discontent over 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.

Subdivision Aspect	*Percent Jurisdictions (n=157)*
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 Guaranties

Fees are one of the tools by which municipalities recover their operating costs and generate revenues. While most fees are directly associated with various steps in the approval and construction process, improvement guarantees are a widely used as an assurance that all enhancements will be made as a precondition for approving the final plat.

Almost all jurisdictions surveyed impose fees on the submission of preliminary plat (94 percent) and final plat (91 percent). Less than half (40 percent) charge for submittal of 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 such fees are not sufficient, 80 percent indicated 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, requiring all improvements be installed before final approval. Such requirements may be detrimental to small scale developers who can not provide up-front money for all improvements and in essence limit development proposals to large scale companies.

Table 19

Type and Frequency of Fees Required From Developers

Type of Fee	*Percent of Jurisdictions Requiring (n=153)*
Tree removal Permit	70 %
Sanitary sewer plan review fee	63%
Sanitary sewer system inspection fee	58%
Clearing and grading permit	55%
Clearing and grading permit	54%
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 release of the performance guarantees.

The multitude of performance guarantee options offered by municipalities, and the provision for release of bonds as improvements are completed is 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 lack of options by 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

Type of Jurisdiction	*Few or no Guarantees offered*	*Some Guarantees Offered*	*Most Guarantees Offered*
low income n=11	0%	29%	71%
Moderate income n=71	11%	70%	19%
Middle Income n=45	25%	56%	19%
High Income 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. On the other hand, 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

Type of Jurisdiction	*Reimbursement Provided*	*Reimbursement not Provided*
low income n=11	72%	27%
Moderate income n=69	77%	23%
Middle Income n=45	73%	27%
High Income n=14	43%	47%

Physical Improvements and Site Development Standards

One of the widely voiced criticisms about subdivision ordinances has been 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 are 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] Subdivisions sewerage collection system standards are also so entrenched and widely accepted that alternative planning, sizing and location of the systems is 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 in challenging proposals put forward to them because of perceived lack of expertise, and a general attitude of not being able to address 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 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 from the developer to carry improvements off-site in other parts of the community or more typically in adjacent area that may be impacted by the new construction. The distribution of on-site and off-site improvements as required by the various jurisdictions can be seen in Table 22 and 23.

Table 22

Typically Required On-Site Improvements

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

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

Table 23

Typically Required Off-Site Improvements

Type of Improvement	*Percent Jurisdictions Requiring (n=157)*
Off-site Storm drainage	59%
Off-site Streets	57%
Off-site Sewer	55.5%

The excessive and often unwarranted nature of physical improvements and standards associated with subdivision development are clearly expressed by the developers we surveyed. When asked to indicate which requirements present the greatest expense, in conforming to regulations, an overwhelming majority (80 percent) pointed to requirements 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 requirements they perceived as excessive 52.2 percent of the respondents indicated requirements related to street construction, with 44.6 percent indicating 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

Type of Regulation	*Percent Developers see an increase of unit cost by more than 5% (n=83)*
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)

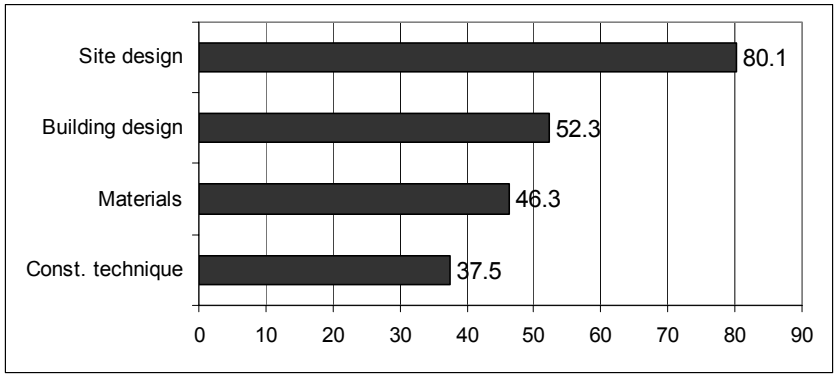


Table 25

Type of Requirement Seen as Excessive
(n=83)

Type of Requirement	*Percent of developers see as excessive*
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 may indicate 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 being 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 being excessive. One of the main questions with 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)

Requirement	*Percent responding as Excessive*	*Percent responding as Not excessive*
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 pip material		75%
Sewer pip 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 concerns 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 can be seen in the 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 in ordinance, 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

Percent of development required to be dedicated for recreational or open space purposes	*Number Jurisdictions*
None	26
1-5%	29
6-10%	38
11-25%	35
Over 25%	13
Total	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 land to be developed 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 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 larger percent of developable land to be 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 distributing 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 an 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 in answering 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

Region	*Average Percent of development to be dedicated for recreational or open space*
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)

Region	*No Requirements*	*Permissive*	*Mandatory*
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

Median Income	*Mandatory or permissive*	*None required*
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 indicates 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 choices 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 pave the way for others to follow. (Table 33)

Table 31

Common New Subdivision Regulations Amendment Introduce 1997-2002
(Mentioned by at Least 10% of Jurisdictions)

increased Specifications and New requirements	*Decreased specifications*
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

New Specification	*Percent of Jurisdictions increasing*	*Percent of jurisdictions Decreasing*
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

Type of change	*Number of Jurisdictions Northeast*	*Number of Jurisdictions South*	*Number of Jurisdictions Midwest*	*Number of Jurisdictions West*
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 Neighborhood*s*, Conservation, and Others

In the 1960s, conventional forms of subdivision development came under increasing assault. Their failure to provide for innovative design and planning solutions, together with increased criticism over cost and waste of resources, led planning authorities in a search for a more flexible and inclusive approach to design and development approval.

Permitting developers to optimize the use of the land by clustering units and preserving natural amenities, as well as putting into place the 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 in 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.

The new form 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 blessing 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 in place an ordinance for alternative development approval. 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 bee seen in the table, these tend to be concentrated in the West probably due to their require size and the availability of land.

Table 34

Percent of Jurisdictions With More Than 10 Alternative Subdivisions (PUDs TNDs Etc) Constructed

Region	*Percent Jurisdictions with 10 or more alternative developments*
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 clustering of units, introducing a variety of housing types, and increasing densities. (Table 35) In less agreement were benefits associated with the approval process. Forty-four percent of public officials indicated 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 when it comes to 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

PUDs Benefits	*Percent of public officials Responding (n=156)*
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 growth of private residential communities in record numbers. 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 common interest developments were historically the domain of the affluent, they are in fact becoming the thrust of suburban and urban residential development. Taking the form of 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 growing 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 housings are marketed with neighborhood associations as their governing body. In California, 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 can be seen in their use by the jurisdictions surveyed. Eighty-four percent or 130 jurisdictions allow privately owned developments to be built in their areas. 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 felt that many private developments are introducing innovative design in the form of building arrangements and the encouragement of unit clustering. Forty-one percent felt such developments permit the introduction of housing types not found in other developments within their communities, and 61 percent indicated private developments allow for narrower streets to be incorporated. It is interesting to note that the perception about private development is relatively persistent in both the minds of public officials and developers alike. (Table 36)

Table 36

Perception of Private Development Design Characteristics

Residential Private Development Characteristics	*Percent of Developers indicating*	*Percent of Public officials indicating*
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 see the benefit of private developments in pushing the design envelop within the confines 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 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 narrower streets to be constructed 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 practice of narrower roadways and smaller building setbacks within private developments has been a widely accepted practice in the last decade. A street standards survey, completed in 1995 showed 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 boundary, 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, then something is wide of the mark with existing conventional parameters. Public officials should realize the double approach to development concede of 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 desire as seen in the housing market.

Growth and Environment Control Measures

Consequences of urban growth and environmental degradation have been at the center of the political and professional agenda for the last three decades. From the national to the local level various measures and mechanisms have been introduced and implemented to control and amend growth's undesired consequences. Although such measures address a wider aspect 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 indicated the concern over the ability to control and provide municipal services, 44.5 percent mentioned apprehension over the ability to maintain the existing character of the community, and 18 percent indicated the worry over environmental degradation. (Table 37)

Table 37

Top Three Concerns about Urban Growth

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

Surprisingly, amplified concerns over the impact of urban growth do not necessarily translate to actions. 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 these measures, the most widely used is the adequate public facilities ordinance. Under this regulation, development cannot be approved if existing public facilities such as schools, police, fire services, or infrastructure, are deemed insufficient to serve the 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

Growth Control Measure	*Number of Jurisdictions Enacting*
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

Region	*Percent of Jurisdictions Enacting Growth control Measures*
Northeast (n=30)	23%
South (n=42)	36%
Midwest (n=45)	20%
West (n=32)	34%

Prominence of growth control measures seems to be even more elevated by developers' perception. Almost 60 percent of developers (45 out of 79 or 57 percent) indicated they have encountered this particular type of restriction. Ordinances which phase developments or tie developments to adequate public facilities have been encountered by over half of the developers. Overall growth control measures and their impacts are on the rise as can be seen in comparison to the 1976 survey. (Table 40)

Table 40

Developers' Experience with Growth Control Ordinances 1976 -2002

Type of Growth control	*Percent of Developers Reporting* 1976 (n=196)*	*Percent of Developers Reporting* 2002 (n=79)*
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 according 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 growth control apparatus. Are these indicating exclusionary tactics by higher income communities, or are they purely coincidental? These questions deserve further research and study. (Table 41)

Table 41

Growth control Measures by income of jurisdiction

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

The increased recognition for protecting natural resources and the integrity of ecological systems has resulted in an array of environmental codes and regulations. 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, and one level of enforcement, many depend on the Environmental Impact Statement (EIS) as an acceptable apparatus.

The basis for EIS is credited to the National Environmental Protection Act of 1969 (NEPA). 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 in the local level can be seen 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 with the rate of no EIS case filing falling from 65 percent in 1974-1976 to 40 percent in 1999-2002.

The influence of EIS can also be seen in the degree by which developers had to amend or change their 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 kind of changes. 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 the ability to generate acceptable plans beforehand. (Table 43)

Table 42

Residential Projects Requiring an Environmental Impact Statement

Percent of total residential development Requiring EIS	*1974-1976 Percent of developers filing for EIS (n=384*	*1999-2002 Percent of developers filing for EIS (n=74)*
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

Action	*1976 Percent of developers (n=133)*	*2002 Percent of developers (n=70)*
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, site planning issues and densities are cited as the most common adjustments. Adding more open space to the development was cited by almost 70 percent of the respondents while changing the location of the buildings on the lots by 61 percent. Unlike the 1976 results, almost half of the developers in 2002 cited also 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 their 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 require changes such as those cited by the developers surveyed, adding open space and lower densities, result in excluding more affordable housing?

Table 44

Type of Changes Required by EIS Review

Design Change	*1976 Percent of developers **	*2002 Percent of developers**
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.o due to multiple responses.

Conclusions and Recommendations

The mazes of codes, regulations and design requirements placed on residential developments have often been at the center of 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 seen in our survey as well as in Seidel's of 1976, government imposed regulations, 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 increased the cost of the homes they built and decreased densities. In many instances these regulations pushed developers to build in green-field location, away from major urban areas, where restrictions and abutters' objections may be less restrictive. When asked to point as to the type of changes in regulations they apply for, many developers indicate that they want to build higher density single family areas and more multi-family units, and would 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 according to the median income of the communities surveyed, results show that in higher income communities, approval of development takes longer than in those with lower income, higher income communities provide less options for performance guarantees, require higher dedication of open space from the developer, and generally are the ones to implement growth control measures. Although the sample is relatively small, such indications suggest exclusionary tactics in these higher income communities may be more prevalent than what is often assumed. Interestingly, 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 of which should give developers and communities tools to build affordable housing, have actually become instrument for anti-housing sentiments and actions.

With such conditions, change is unlikely to happen through traditional means but rather by outlyers 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, Fl and Prairie Crossing, Ill. Communities that were built as common interest development privately owned and maintained by Home Owners Associations.

Renegades such as these often serve as serve as catalysts in changing subdivision standards and regulations. At the national level several professional associations have endorsed local adjustment of fixed national standards. The Institute of Transportation Engineers (ITE), for example, has gone through a reexamination of 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 incite 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 existing land use laws and regulations as to their impacts on the construction of higher density developments and moderately priced housing.
- 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, such as those relating to streets' widths, ROW and building setbacks, on residential developments forms and housing costs.

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 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 multiple agencies and committees involved in the process. In order to eliminate delays and jurisdictional conflicts, localities can consider consolidating this process into the hands of one agency, and establishing a uniform structure for appeals to be reviewed and approved by this sole agency.
- Innovative elements of an application should be assessed in the same timeframe as standard applications.
- Streamlining the process can also be improved by introducing electronic permitting systems. As internet use is spreading and becoming more available, there is a growing expectation for conducting 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 that need to be considered. 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 are slow to occur. 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. In an era of media and marketing, the ability to showcase achievements and alternative practices may prove to be the most important tool for change. Public agencies as well as developers could devote more time in the effort to disseminate their experiences and successes and make it readily available in tangible form.
- Public officials, representative of the housing industry, and planning related organizations could re focus on educating the public on the implications of continuation of existing practices and the benefits of planned development. Emphasis ought to be made on the benefits of alternative design schemes that focus on density.
- The difficulty to visualize the physical ramifications of land use and subdivision regulations is a barrier that has to be overcome on the road to 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 afford visualization of otherwise abstract standards can be integrated into the various coding 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 complimenting setback relationships and site design styles. Variance requests can be viewed and evaluated graphically as opposed to just a written application.
- Promising new venues can be seen in the application and adaptations of new technologies that are web based and do not require a high level computing. The Visual Interactive Code (VIC) ™, 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]

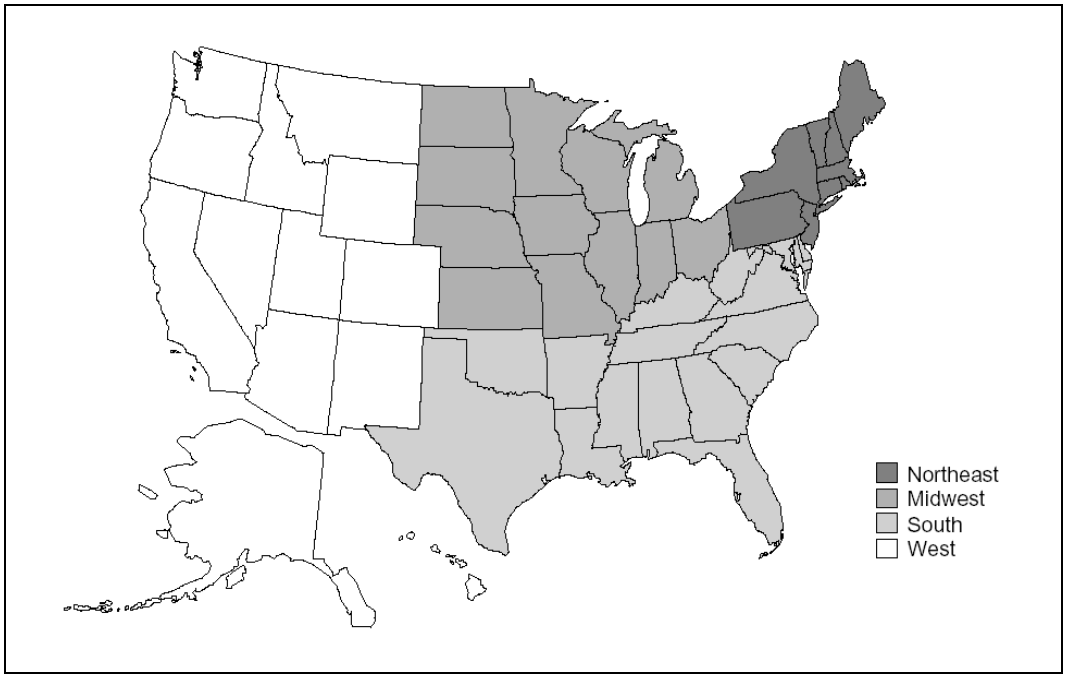
Appendixes

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 building permits were used since they best represent subdivisions requirements. 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 standard distribution of the states within these regions.

Figure 8

US census geographic regions



Jurisdiction Selection

The primary factor in selecting the jurisdiction samples was the number of building permits issued for single family housing. Our assumption was that jurisdictions that are issuing extensive building permits are the ones that 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)

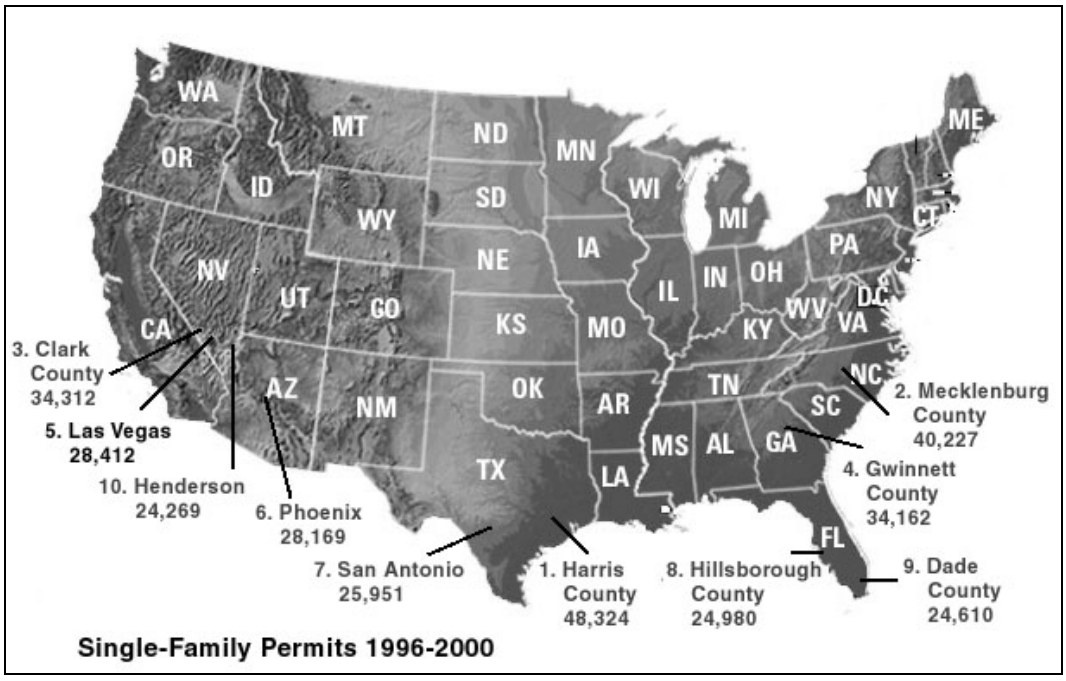


Table 45

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	3,4312
Las Vegas	Nevada	2,8412
Phoenix	Arizona	2,8169
Henderson	Nevada	2,4269
El Paso County	Colorado	2,1490
Mesa	Arizona	1,9560
Douglas County	Colorado	1,8639
Gilbert town	Arizona	1,7933
Maricopa County	Arizona	1,5870
Albuquerque	New Mexico	1,5089

SOUTH PLACE NAME	State	Total Permits
Harris County	Texas	4,8324
Mecklenburg County	North Carolina	4,0227
Gwinnett County	Georgia	3,4162
San Antonio	Texas	2,5951
Hillsborough County	Florida	2,4980
Dade County	Florida	2,4610
Orange County	Florida	2,3993
Fairfax County	Virginia	2,1281
Loudoun County	Virginia	1,9919
Palm Beach County	Florida	1,9589

Selection of Developers

Two data bases were used in selecting the developers' sample. A list obtained from the Urban Land Institute provided the majority of the sample. This list was compared to data provided by Builder Magazine which lists each year 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 develop nation-wide 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 developed 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)

Region	*Average Population*	*Mean*
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)

Population	*Number of Jurisdictions*	*Percent of Total*
Up to 29,9990	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)

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

- Low- up to $39,999
- Moderate – $40,000-S59,999
- 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 an 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, potential 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* ITE instead of using dimensioning charts and specific design criteria, 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 PP 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

References

Advisory Commission on Regulatory Barriers to Affordable Housing. (1991). *Not in My Back Yard": Removing Regulatory Barriers to Affordable Housing.* Washington, D.C.: U.S. GPO.

American Society of Planning Officials. (1945). Campaigned opened to "Break" Municipal Subdivision Regulations and Control. *Planning Advisory Services News Letter.* November 23.

Burchell R., Dolphin, W., and Galley, C. (2000) *The Costs and Benefits of Alternative Growth Patterns: The Impact Assessment of the New Jersey State Plan*. New Brunswick, N.J. : Center for Urban Policy Research, Rutgers, the State University of New Jersey.

Burchell, R., Shad, D., Listokin, H. Phillips, A., Downs, S., Seskin, S., Davis, T., & Moore, D. (1998) *The Costs of Sprawl - Revisited.* TCRP Report 39. Transportation Research Board, Washington, DC: National Academy Press.

Euchner, C. (2003). *Getting Home: Overcoming Barriers to Housing in Greater Boston.* Boston, MA: Pioneer Institute for Public Policy Research.

Field C. and Rivikin S. (1975). *The Building Code Burden.* Lexington, MA: Lexington Books.

Fischel, A. (1990). *Do Growth Controls Matter? A Review of Empirical Evidence on the Effectiveness and Efficiency of Local Government Land Use Regulation.* Cambridge, MA: Lincoln Institute for Land Policy.

Gordon, P. & Richardson, H. (1997). Are Compact Cities a Desirable Planning Goal?, *Journal of the American Planning Association*, 63(1), 95–106.

Green, R. (1999) Land Use Regulation and the Price of Housing in a Suburban Wisconsin County. *Journal of Housing Economics,* 8, 144-159.

Henry, P. Susan W. (1990). "The Effects of Land-Use Constraints on Housing Prices," *Land Economics,* 66, (3), 315-324.

Housing and Home Finance Agency. (1952). *Suggested land Subdivision Regulations.* Washington DC: United States Government Printing Office.

Kelly, E. (1993). *Managing Community Growth : Policies, Techniques, and Impacts*. Westport, Conn. : Praeger.

Luger, M. I. and Temki, K. (2000). *Red Tape and Housing Costs : How Regulation Affects New Residential Development.* CUPR Press.

Pendall, R. (2000). Local Land Use Regulation and the Chain of Exclusion. *Journal of the American Planning Association* 66:2, 125-42.

Peirce, N. (2003, February). Zoning: Ready To Be Reformed? *Washington Post Writer Group.*

Proceeding s of The Second National Conference on City Planning and the Problem of Congestion, May 1910, Rochester, New York. Cambridge, Ma: Harvard University Press

Real Estate Research Corporation. (1974). *The Cost of Sprawl, Environment and Economic Costs of Alternative Residential Development Patterns at the Urban Fringe*. Washington D.C.: U.S. Government Printing Office,

Rosen, K., & Katz, L. (1981). Growth Management and Land Use Controls: The San Francisco Bay Area Experience. *Journal of Urban and Real Estate Economics*, 9,4, 321-344.

Salkin, P. (1993). Barriers to Affordable Housing: Are Land Use Controls the Scapegoat? *Land Use Law & Zoning Digest.* 45, 4, 3-7.

Seidel, S. (1978). *Housing Costs and Government Regulations: Confronting the Regulatory Maze*. New Brunswick, N.J.: Center for Urban Policy Research, Rutgers, the State University of New Jersey.

Sierra Club (1998). *The Dark Side of the American Dream.* Retrieved March 5, 2003, from the Sierra Club web site: http://www.sierraclub.org/sprawl/report98/

Urban Land Institute. (1958). *The Effect of Large Lot Size on Residential Development*. Technical Bulletin No. 32. Washington, D.C.: ULI.

Wheaton, W.L. & Schussheim, M.J. (1955). *The Cost of Municipal Services in Residential Areas.* Washington, DC: U. S. Department of Commerce.