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"Places with traditional land use regulations—mostly in the Northeast and Midwest—have lower densities and fewer housing opportunities for lower income residents than those that have embraced a new paradigm for regulating growth and development."

From Traditional to Reformed:
A Review of the Land Use Regulations in the Nation's 50 largest Metropolitan Areas

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Local land use regulations help define the character of cities, towns, counties, and entire regions. Zoning, comprehensive plans, infrastructure control, urban containment, building moratoriums, and permit caps can drive development outward, promote density, or something in between. They can also directly affect the composition of inhabitants by facilitating rental properties and low-income residents, especially when these regulations are coupled with programs to promote housing affordability. This comprehensive survey of local land use regulations finds a wide variety of regulatory regimes, classifying them in four broad typologies, across the nation's 50 largest metropolitan areas. They range from exclusionary and restrictive to innovative and accommodating. These produce a variety of effects on metropolitan growth and density, and on the opportunities afforded to the residents that live there.

I. Introduction

A key component of the struggle for prosperity in American metropolitan areas is development patterns, which define everything from density to the socioeconomic make up of residents. Development patterns are partly a consequence of decisions by local governments—often with very little coordination, oversight, or even guidance from state or regional entities—about the physical character of new growth. Among the most important of these decisions is how to regulate land; a prerogative that local governments guard jealously.

Land use regulations contribute to many metropolitan problems. Economists attribute high housing costs in part to regulations that restrict supply and increase the quality of housing and neighborhoods, especially on the nation's coasts. Advocates for low-income families blame certain types of zoning for the lack of housing opportunities in suburban areas. Environmental advocates contend that low density zoning exacerbates urban sprawl and thereby aggravates habitat loss and the degradation of air and water quality. And planners have found that some land use regulations displace development, leading to excessive land consumption and increased driving times.

Yet land use regulations related to housing also hold out the promise of benefits. Indeed,

their origin is rooted in that very promise. In theory, they can offer an efficient mechanism both to limit exposure to "externalities," that is, negative effects of development on neighboring properties, and to reduce those externalities in the first place. To the jurisdictions that use them, of course, regulations allow residents to reduce competition for public services, balance the budget, and protect valued open space, thereby raising property values and wealth for property owners. Land use regulations can also promote beneficial development patterns that would not appear in their absence, shaping land markets to encourage high densities, mixed uses, and transit oriented developments that the market currently fails to provide in sufficient quantities.

However, despite their fundamental importance, too little is known about the current landscape of housing regulation in the United States.

The absence of a detailed national database on land use regulations has made it difficult to begin a comprehensive look at their costs and benefits. The headlines and popular attention tend to concentrate on non-regulatory programs—bond issues and land trusts—to secure open space. Academic inquiry is focused on a few tools, such as urban containment, impact fees, and building permit caps. Research in general has been hindered by a lack of systematic data that permit a comprehensive assessment of regulation on the ground.

For a more comprehensive view of the conditions under which most housing is now built in the United States, we surveyed local governments in the 50 largest metropolitan areas to learn how they regulate land use and promote housing affordability. Over 160 million residents—57 percent of the population in the United States—live in these 50 metropolitan areas, and they account for about 300,000 square miles of land.

This study reports on the results of the survey (conducted in 2003) in which over 1,800 cities, townships, and counties responded to questions about land use regulations that affect housing. Their responses allow us to reach conclusions about the nature of land use regulation at the metropolitan level, where local land use regulations combine to produce sometimes unexpected regional results.

In short, this research finds that basic land use regulations like zoning and comprehensive planning continue to be employed in metropolitan jurisdictions all across the nation. Other tools associated with land use reforms——such as growth management and infrastructure regulation——are still uncommon. However, this picture varies considerably throughout the nation. Metropolitan areas in the Northeast and Midwest tend to use regulations to exclude most types of growth, while those in the West employ regulations that accommodate and manage growth. Possibly as a result, places with traditional land use regulations have lower densities and fewer housing opportunities for low income and minority residents than those that have embraced a new paradigm for regulating growth and development.

II. Background

Aside from the broad Constitutional parameters of the Takings Clause, land use regulation in the United States is a decidedly local affair. Because the U.S. Constitution says little about land use—or local governments, for that matter—the issue remains in the hands of state constitutions, legislatures, and courts. State governments, in turn, have historically delegated decisions about land use to local governments—cities, villages, townships, counties—and have only recently and incompletely begun to embrace the coordination of local plans with one another and with state or regional goals. And even though there is a surprisingly standard template for suburban land use planning, very surely there are multiple local approaches.

This section discusses the evolution of land use regulation in the U.S. and briefly summarizes the research on the impacts of these regulations.

A. Basic government regulation: Zoning and planning

The most common form of local land use regulation in this nation is zoning. Simply put, zoning entails separating the land in a particular area into sections, or zones, with different rules gov-

erning the activities on that land. American voters, land developers, and Realtors have long supported zoning for its ability to stabilize property values and protect single-family homes. But while there is a perception that these regulations maximize home values, they can also impose a range of social costs such as exclusion of low- and moderate-income residents, traffic congestion, and metropolitan decentralization. These costs are often not recognized.[2]

The earliest use of zoning-like controls responded to concerns over public health. Land use restrictions had been practiced as early as the late 1800s as a means of confining "nuisance" uses to certain areas of a city. But very early on, zoning also emerged as a mechanism to separate people by race. And although the U.S. Supreme Court ruled racial zoning unconstitutional in 1917, municipalities continued to adopt and enforce racial zoning ordinances for years afterward.[3] Zoning has been much more durable as a tool to separate people by class, especially by controlling the location of multi-family housing.[4]

Since 1926 the Court has consistently upheld zoning and other land use controls not only for their ability to prevent nuisances but also because they are rationally related to public health, safety and welfare.[5] Zoning has been Americans' favored land use control ever since. In some cases, zoning has evolved away from its early 20th century roots as a rigid system that separates uses and focuses on single lots, toward a more flexible system allowing discretion, mixing of uses, and a focus on larger land areas.

Comprehensive planning, on the other hand, has historically received much less enthusiastic support than zoning. A comprehensive plan is largely a policy statement of the future land use and development goals of a particular jurisdiction. Also known as a master plan or general land use plan, it serves primarily to mitigate conflicts between different land uses. But it also functions to coordinate such related issues as transportation, economic development, housing, parks, and recreation.

Local governments began to adopt comprehensive plans at a rapid rate after Congress passed the Housing Act of 1954. That law required local governments to adopt a long range general plan before they could qualify for urban renewal, housing, and other grants. In fact, many communities adopted their first comprehensive plan as a result of the Housing Act.[6] In many states, planning requirements differ little from those in effect when the 1956 law passed; as a consequence, many local plans still in use today look a lot like those first plans.

Starting in the late 1960s, however, some state governments began requiring local governments to plan. California required local governments to adopt general plans starting in 1971, and soon thereafter required them to bring their zoning ordinances into conformity with their plans. In 1973, Oregon adopted state-wide growth management legislation requiring local governments to adopt comprehensive plans that were consistent with a series of state goals. Florida adopted a comprehensive program of "critical area" protection review, also requiring local governments to plan for the first time.

In the mid- to late 1980s, another wave of states—Washington, New Jersey, Vermont, Rhode Island, Georgia, and Maine—passed legislation requiring or giving stronger incentives for local planning to better manage growth, consistent with state goals. Florida made further changes to its planning system, intensifying state review of local plans. Tennessee and Delaware also added growth management features to their planning legislation in the 1990s in response to pressures created by rapid suburban development.

The best known recent example of legislation embracing these principles is Maryland's planning reform of the mid-1990s. Its key provision for land use planning and regulation (almost all of which is carried out at the county level) provides that local governments will designate "priority funding areas" in which new growth is slated to occur and that the state will invest in major infrastructure only in those areas.[7]

These efforts are referred to broadly as "growth management," a term used to describe the deliberate and integrated use of the planning, regulatory, and fiscal authority of state and local governments to influence the pattern of growth and development in order to meet projected needs. This definition includes such tools as comprehensive planning and zoning, but also development fees, infrastructure investments, and other policy instruments like containment that significantly influence the development of land and the construction of housing. Growth

management is often distinguished from "growth control." Where growth management accommodates projected development in a manner that achieves broad public goals, growth controls limit or ration development. Typical growth control tools are moratoria, permitting caps, development quotas, and the like, as discussed below.[8] This distinction is an important consideration in our analysis.

B. Regulating the pace, location, and extent of development

In some states the regulatory toolbox now goes far beyond zoning to a family of tools intended to influence the pace, location, and ultimate extent of development.[9] One of the most significant local land use innovations in the last 30 years has been in the anticipation and incorporation of the impacts of growth on local infrastructure and environmental systems, at the scale of both individual developments (subdivisions and site plans) and larger areas (neighborhood plans and comprehensive plans). Local governments now use a variety of supplementary tools for these purposes. They impose impact fees on building permits as pro-rata shares of capital costs for a variety of infrastructure systems; and state laws have evolved to regulate the scope and permissibility of fees. The principle of "concurrency," often adopted through adequate public facilities ordinances, requires local governments to monitor the impact of development as it occurs. If a development proposal threatens to increase volumes served by certain infrastructure in such a way that it would threaten locally acceptable levels of service, then the applicant may be denied permission to build.[10]

As an alternative (and sometimes a supplement) to measures that match infrastructure to growth, there are tools that control or stop growth altogether. This is done sometimes so new development does not exceed infrastructure capacity, and sometimes simply so that growth does not seem "too fast." Systems rationing annual building permit issuance debuted in the early 1970s in Petaluma, CA and Boca Raton, FL. Both of these places had been swept by waves of growth emanating from the centers of their metropolitan areas.[11] In early years, these controls were adopted exclusively to limit new residential construction. But more recently, several jurisdictions (including San Francisco and Seattle) have also placed annual caps on office construction.

Various studies suggest that as local governments have invented new growth control instruments, they have also modified their use of older standard tools in attempts to influence development outcomes. Local governments can reduce permitted density and height ("downzone") or designate less land than the market would demand for residential development, and they can "gold plate" subdivision requirements and so reduce their attractiveness for low-cost housing. They can also increase the amount of time required to process development applications.

Growth controls have become more common in some states partly because of their access to such direct democracy measures as the referendum. In California, citizens' access to the ballot initiative has heightened public awareness of the possibility of controlling growth. Although only about 15 percent of the California growth measures in effect in 1988 were adopted by voter initiative, the availability of the initiative and the example the successful initiatives set may well have influenced city council members' land use decisions. Colorado residents also have access to the ballot for growth measures.[12]

A final trend in local planning and regulation, urban containment, responds to concerns about both open space and infrastructure capacity.[13] Oregon, Washington, and Tennessee all have state growth management programs that require various forms of urban containment. Containment can take a "loose" form, carried out through phasing systems that manage the spread of development without imposing an outer boundary; it can also be a result of permanent greenbelts or semi-permanent urban limit lines. To carry out these policies that shape the urban edge, local governments establish regulations to limit the extension of infrastructure; purchase or rezone land beyond the proposed edge of development; and create incentives using regulations and public investment to spur development in designated areas.

C. Local housing programs: Counterpoint to growth management

Until about 1970, affordable housing had been primarily a responsibility of either the federal government (through the construction of public housing) or a matter for resolution by the private sector (through the "filtering" of old housing units to lower-income households). But in the 1970s, affordability problems began to spike faster than either filtering or federal programs—even new programs like federally subsidized but privately built housing—could address them. Moreover, the urban uprisings of the 1960s convinced policymakers, planners, and judges that regions could not thrive if they relied on their older central cities to accommodate most of their low-income residents.

On both coasts, new local housing measures arose in the 1970s in response to both state and federal mandates and innovation by local officials and residents who wanted their communities to have a balanced supply of housing. After 1980, when the federal government effectively withdrew from funding new public housing, local governments increasingly supported both regulatory programs and spending for affordable housing.

A first key policy innovation involves the use of local land use regulations to induce or require the production of affordable housing units. Such strategies are most common in states whose legislatures or courts have imposed it or made it available to builders as a remedy to local exclusionary practices—most notably Massachusetts, Connecticut, and New Jersey. In these states, builders who want to provide affordable housing can ask higher authorities to override restrictive zoning provisions in jurisdictions that have done too little to accommodate a share of affordable housing in the past. Local governments offer a wide array of regulatory incentives in exchange for commitments to affordability, the most common of which are density bonuses, reduced impact fees, expedited permitting, and flexible development and subdivision standards.[14]

A second innovation, again often sparked at least as much by state requirements and inducements as by local initiative, has been increased local spending on affordable housing. Local governments have greatly expanded their capacity to subsidize affordable housing construction partly because of the creation of federal programs including 1974's Community Development Block Grant and 1990's HOME Investment Partnerships Program. In the last 25 years, New York City has spent billions of its own general revenue funds to support affordable housing. Other jurisdictions have tapped special sources of revenue for housing. California, for example, requires local government redevelopment agencies to set aside 20 percent of the increased tax increment generated by the development in their project areas for affordable housing.[15]

In addition, local regulatory programs generate affordable housing fees; some localities allow developers to meet inclusionary requirements by paying an "in-lieu" fee, and others have adopted linkage fees that require developers of commercial and office space to contribute funds to offset the need for associated affordable housing. When local governments collect such fees, they often use them to capitalize dedicated housing trust funds (HTFs), which can also draw on a wide range of taxes, charges, fees, donations, and allocation of federal block grant funds.

D. Impacts of Land use Regulations

Research into the impacts of land use regulations can be separated into two main areas. First, do they achieve their stated purposes: Do zoning ordinances make a difference in the pattern of land uses? Do growth controls slow growth? Do urban growth boundaries affect the expansion of urban areas? Second, do land use regulations have other "downstream" effects—whether intentional or unintentional—on such outcomes as housing affordability, environmental quality, infrastructure capacity, and segregation by race and income?[16]

Most of the purported benefits and costs of land use regulation begin from the assumption that regulation and planning will produce a different direct outcome in land development patterns than an unregulated land market. Hence the first question about land use regulation must always be: Does it have any impact at all? This question has been pursued in research concerning, for example, whether zoning "follows the market" and by studies of whether growth controls "work." Whether the research compares jurisdictions within the same metropolitan area or compares metropolitan areas with one another the answer tends to be: it depends.

If, as is often the case, local politics is dominated by development and real estate interests, then political bodies often adopt land use regulations that support or endorse market trends rather than affect land markets. Studies have shown that in some jurisdictions regulations have had little visible influence on the location and amount of development or on the price of land.[17]

Other studies have identified places and regions where regulations have had substantial direct effects on development patterns and land prices. Most consistently, building permit caps and extensive low density zoning appear to associate with slower growth, less housing provision, and, at the regional level, lower density land use patterns than would occur in their absence.[18] Strong regional urban containment and growth boundaries appear to have reduced sprawl in Oregon but local, or isolated, boundaries may not have that effect more generally.[19] At the larger level some research shows that states with growth management do not differ significantly from non-growth management states.[20] In short, implementation matters with all these regulations, and results vary dramatically depending on both the initial design of the regulation and its execution.

The weight of the evidence suggests that places with stricter land use regulations differ systematically from those where they are less strict. The evidence is clearest (because it has been sought most zealously) about housing prices, which are higher in strictly regulated places. But regulations do not just restrict supply; they also raise the quality of housing, neighborhoods, and jurisdictions.[21]

However, even if regulations only raise amenity levels without restricting supply they can also play a role in the fragmentation of space according to income and race. Research on regulation shows that strictly regulated jurisdictions and places are more likely to be occupied by white non-Hispanic and upper-income people and households, just as—and at least partly because—such places also have higher housing prices.[22]

Only recently have studies on regulations and racial or income segregation followed the lead of housing price research to ask whether regulated metropolitan areas are internally more integrated or segregated than less regulated metropolitan areas. Evidence suggests that metropolitan areas with urban containment programs experienced more rapid declines in black-white segregation than those without containment, though exactly why containment associates with declining segregation is still unclear. To the extent that containment raises densities it may also associate indirectly with elevated segregation by income, because high-density metro areas have been found to have more income segregation.[23]

The pathway from regulation to exclusion by income or race is complex. Total low density zoning, in particular, tends to exlude black and Hispanic residents from the jurisdictions that use it by reducing the supply of the types of housing that tend to be available for rent.[24] This underscores the point that policy reform requires more precise specification of just which regulations associate with income and race-based segregation. It is also necessary to learn more about how different combinations of regulations at subregional and metropolitan levels might produce different results for regions.

In sum, local regulations shape the built form and character of cities, towns, counties, and entire regions. Zoning, comprehensive plans, infrastructure finance, urban containment, building moratoriums, and permit caps can foster low density development and metropolitan decentralization or promote a more compact development pattern. They can also directly affect the socioeconomic composition of the local populace by opening or closing doors for renters and low-income people. Together, local land use regulations and housing programs can produce regional equity or inequity, safeguard or undermine environmental quality and public health, and create a more efficient or inefficient pattern of public services.

III. The Survey of Local Land Use Regulations

The survey that provides the basis for this analysis was sent by mail to every local government—incorporated municipalities, townships, or counties—in the 50 largest U.S. metropolitan areas (according to 1999 metropolitan definitions and 2000 Census results, based on CMSAs and MSAs) with both a 2000 population over 10,000 residents and regulatory authority on the broad array of issues covered in our survey.[25] The eight-page survey was sent to the planning director of each jurisdiction where one existed. In jurisdictions without planning directors, we addressed the survey to either another staff member (e.g., city manager, city engineer, zoning enforcement officer) or a public official (e.g., mayor, planning board chair, city clerk).[26]

Our census of jurisdictions over 10,000 residents included 2,365 jurisdictions, 62 percent of which responded. In 17 metropolitan areas, this census captured either fewer than 50 percent of residents or less than 50 percent of metropolitan land area. For 15 of these metropolitan areas, we drew a random sample of up to 50 jurisdictions under 10,000 residents. (In Buffalo and Hartford, we surveyed all jurisdictions because each had fewer than 50 jurisdictions under 10,000 residents.) Among these 812 small jurisdictions, 47 percent responded. In total, 1,844 of the 3,177 jurisdictions—over 58 percent—responded.

The survey covers six discrete, but related areas of land use regulation: 1) zoning, 2) comprehensive planning, 3) containment, 4) infrastructure regulation, 5) growth control, and 6) affordable housing programs and funding. This report is structured around those six areas.

Following are the principal questions for each area of land use regulation:

1) Zoning. First, the survey investigated whether the jurisdiction has zoning at all. If so, the survey determined the maximum permitted residential density in the zoning ordinance in dwellings per acre. Five density ranges corresponding to particular housing types were provided: Fewer than four dwellings per acre (mainly low to moderate density single family housing), four to seven per acre (high density single family housing and duplexes), seven to 14 (small multi-family structures), 15 to 30 (garden apartments), and over 30 (larger apartment buildings).

The survey asked whether the maximum permitted density had increased since 1994 by more than 10 percent, remained the same, or decreased more than 10 percent. It also asked whether mobile home placement would be allowed by the zoning ordinance, either "single wide" or "double wide" units.

Finally, to learn more about the impact of zoning on multi-family development, the survey investigated whether the ordinance had a zoning category that would allow construction either "by right" or by special permit of a prototype apartment development with 40 units of two story apartments on a five acre lot. The purpose was to investigate the extent to which zoning excludes certain development types and, by extension, the households that would hypothetically occupy them.

2) Comprehensive planning. The survey asked whether the jurisdiction had a comprehensive plan and when its land use element was last updated.

3) Containment. The local governments surveyed were asked to report on whether they used any of a series of growth containment measures such as service areas or service boundaries, growth areas or growth boundaries, and/or greenbelts. They were also asked what year they had adopted these measures.

4) Infrastructure regulation. The inquiries about impact fees and adequate public facilities ordinances included questions about whether the municipalities had either of these tools. Regarding impact fees, the survey asked whether the fees were calculated case by case or at a flat rate; what the flat fee was, if any; and which infrastructure systems were subject to impact fees. It also asked which infrastructure systems were subject to adequate public facilities ordinances.[27]

5) Growth control. The survey asked whether the jurisdiction had a building permit cap, how many units were allowed to be built each year, and how long the cap had been in place. It asked whether there was a current moratorium on issuance of building permits, how long it had been in place, and whether it covered only some or all of the jurisdiction. The distinction between innovative and restrictive growth control measures is among the most complex in our analysis.

6) Affordable housing. Finally, the survey asked a battery of questions about local affordable housing programs. The first concerned regulatory approaches, such as inclusionary zoning, density bonuses, linkage fees, fast-track permitting processes, and fee waivers. Second, it asked local governments if they directly work to create affordable housing, for example, by spending their own funds or working with nonprofits and public housing authorities, or by setting up a dedicated funding source (such as a trust fund) for affordable housing. Finally, it asked them to estimate the number of assisted housing units in their jurisdictions.

Response rates varied directly with jurisdiction size; among the 259 largest jurisdictions (over 100,000 residents), 77 percent responded. Only about half (51 percent) of the 1,721 jurisdictions under 20,000 residents responded, and around 65 percent of the 1,168 jurisdictions between 20,000 and 100,000 residents responded. To enhance response rates, we followed up with a second survey form three weeks after the first mail-out; key jurisdictions such as large cities and counties were also contacted again by e-mail, fax, and phone to boost response rates.

Response rates varied slightly by region with the highest rates received from the West (69 percent) and the South (68 percent); slightly lower response rates were received from the Midwest (57 percent) and Northeast (51 percent). Response rates varied more by metropolitan area: 100 percent of the jurisdictions in Las Vegas responded to the survey, compared with only 38 percent of surveyed jurisdictions in the New York metro area. Other high-response metro areas include Oklahoma City and Austin (88 percent) and Denver (86 percent). Other low-response metro areas include Louisville (43 percent), Raleigh-Durham (47 percent), and Kansas City (48 percent).

The majority of respondents were planning staff members—65 percent. Thirty-eight percent of all respondents hold the title of either director of planning or director of community development. The remaining respondents included building/zoning staff (14.5 percent); engineering staff (1.7 percent); city administrators (5.2 percent); municipal clerks/secretaries (4.3 percent); elected officials (3.9 percent); administrative assistants (2.5 percent); and planning board chairpersons (2.5 percent).

Once the surveys were complete and coded, estimates were constructed of the incidence of 16 key land use regulations and housing programs at the metropolitan level and stratified by three and sometimes four dimensions. The proportion of local governments that had the regulation in question was determined by *jurisdictional type* (incorporated, township, county), in the same *state*, within the same *population range* (up to five population categories). Larger states and those with significant intra-state variation (e.g., Texas, California) were also stratified according to *metropolitan areas* or groups of metropolitan areas. The result was a table of proportions (probabilities) that were then applied to non-respondents and non-surveyed municipalities. For instance, if 10 of 40 small municipalities that responded to our survey in one state had a building-permit cap, it was presumed that 25 percent of all municipalities in that population range in that state had a cap.

This process allowed the estimation of how many and what share of jurisdictions had a particular regulation. But two other aspects of regulation also were important as indicators of regulatory intensity in a region: the share of the 2000 population living in jurisdictions with the regulation, and the share of the 2000 land area located in these jurisdictions. Each of these were estimated by multiplying each jurisdiction's probability of having a regulation by its 2000 population and land area and then summing to a total regional estimate. This yielded an estimated number of people and of square miles in each metropolitan area that were subject to each regulation, which, added to the "known" results from the survey, allowed estimation of the share of people and land area in each metropolitan area in jurisdictions with or without each of these 16 regulations.

Adding complexity to this process, in several states in the Midwest (Minnesota, Illinois, Wisconsin, and Ohio) counties and townships share sovereignty over at least some land use issues in areas outside incorporated units. For these metropolitan areas, the estimates of the share of jurisdictions with each regulation include all the jurisdictions. The estimates of the share of population and land area are estimated according to whether or not it had *either* a county-level version of a regulation *or* a township-level version. (These data were collected in follow-up sur-

Table 1. Measures used in factor analysis

Factor	Measure
Zoning	1. Presence of zoning
	2. Low density-only zoning
	3. Zoning allowed above 30 dwellings per acre
	4. Permission for the prototype high density apartment complex
Comprehensive Planning	5. Presence or absence of a comprehensive plan
Containment	6. Presence of a containment device
Infrastructure Regulation	7. Presence of adequate public facilities ordinances
	8. Utilization of impact fees
Growth Control	9. Utilization of building moratoria
	10. Presence of permit caps
Affordable Housing	11. Presence of a regulatory affordable housing program
	12. Existence of a funding source (such as a trust fund)

veys and Internet research on county and township regulations.) Adjustments were made to avoid double-counting the population and land area in unincorporated areas.

Since some metropolitan areas cross state lines, and since state law affects local land use regulations, separate sub-metropolitan areas were created for each state into which a metropolitan area extended. For example, since the St. Louis MSA includes portions of Missouri and Illinois, the region was treated as two cases.[28] So while the top 50 metropolitan areas are analyzed here, there are actually 73 geographic units that are considered.

Factor analysis was used to characterize the prevalence in each metropolitan area in each of the six areas of land use regulation mentioned above.[29] Between one and four survey measures were used for each of the analyses. For each of the measures, there were three variables: the percent of jurisdictions covered, the percent of population covered, and the percent of land area covered. Thus the number of variables ranged between 3 for comprehensive planning and containment and 12 for zoning (Table 1).

Once the factor analysis was complete, hierarchical cluster analysis was used to gain a more empirically based view of which metropolitan areas most resemble one another in their regulatory structure based on the land use tools/factors.[30] Two metropolitan areas with identical factor scores on all factors would be clustered at an early step of the hierarchical clustering process; with each step in the process, increasingly dissimilar metropolitan areas are placed into the cluster in which they best fit.[31] Often, an unusual metropolitan area can remain unmatched while two similar clusters of cases are matched. For this analysis, the cluster analysis resulted in 12 clusters—or typologies—that identify similar approaches to residential land use regulation in the 50 largest metropolitan areas. As mentioned, as some metropolitan areas have sub-regions—parts of a metropolitan area in another state—the regulatory family for 62 total areas is identified.[32] These 12 clusters, in turn, can be combined into four major groups based on their similarity to one another.

In view of the evolutionary and functional relationships among the clusters and groups, we label them as orders and families of regulatory approaches; they are somewhere in the middle of the taxonomy of regulatory approaches: not as broad as kingdoms, phyla, or classes and more general than only genera and species. We hope that this classification effort will be treated in the spirit of Stephen Jay Gould's contention: "Taxonomy … is often undervalued as a glorified form of filing—with each species in its prescribed place in an album; but taxonomy is a fundamental and dynamic science, dedicated to exploring the causes of relationships and similarities among organisms. Classifications are theories about the basis of natural order, not dull catalogues compiled only to avoid chaos."[33]

IV. Findings

This section reports on the results of the analysis derived from the 50 metropolitan area survey. (A companion piece has also been developed that provides a detailed examination of the governance framework, growth trends, and regulatory environment in the 50 largest metropolitan areas analyzed here.)[34]

1. Basic land use regulations like zoning and comprehensive planning dominate the regulatory landscape all across the U.S. while other tools like containment and permit caps are far less common.

More than 91 percent of the jurisdictions in the 50 largest metropolitan areas have zoning ordinances of one kind or another in place (Table 2). Only 5 percent of the metropolitan population lives in jurisdictions without zoning, but as much as 11 percent of the land area is estimated to be unzoned.

Almost as many jurisdictions—85 percent—have a comprehensive plan. As a result, 84 percent of the population and 92 percent of the land area is subject to a plan for how the particular jurisdiction intends to grow and develop in the future.

As discussed in the earlier section, neither of these tools—zoning or comprehensive planning—is especially innovative. Nor does their presence mean a jurisdiction will accommodate growth. To the contrary, in nearly a quarter of the local governments the maximum permitted residential density in the zoning ordinance is less than 4 dwellings per acre, and another 16 percent restrict the maximum density to fewer than 8 dwellings per acre. Together these "low density-only" jurisdictions account for 38 percent of the local governments in the 50 largest metropolitan areas.

Most of the low-density-only jurisdictions—30 percent of the total—would also bar our hypothetical apartment development. That is, a multi-family apartment development with 40 units of two-story units on a five-acre lot would be illegal in these places. Further, about half the local governments have zoning ordinances that prohibit placement of mobile homes.

Not surprisingly, low density-only jurisdictions account for a much smaller share of the metropolitan population—about 12 percent—than of jurisdictions with higher densities. But low density-only jurisdictions account for 19 percent of the metropolitan land area, and those that exclude the hypothetical apartment development make up 16 percent. By contrast, only about 12 percent of the jurisdictions have maximum allowable densities of greater than 30 units per acre. Yet 48 percent of the metropolitan population lives in these jurisdictions. (It should be noted that this does not mean that over half of the population lives at such densities—only that the jurisdictions in which they live allow such densities somewhere within the municipal boundaries.)

The survey results also suggest that the maximum permitted density has generally remained the same over the last ten years. Four-fifths of the jurisdictions were within 10 percent of their 1994 density in 2003. Nearly equal shares of jurisdictions have increased maximum permitted density (9 percent) and decreased the maximum (10 percent). The jurisdictions that raised the ceiling on density account for more residents (10 percent of the total) and land area (7 percent of the total) than those that reduced permitted density (7 percent of the residents, 5 percent of the land).

Apart from zoning, impact fees are the most common tool in the U.S. today for residential land use regulation; they are imposed by 37 percent of jurisdictions containing 56 percent of the population and 46 percent of the land area in the top 50 metropolitan areas. Adequate public facilities ordinances (AFPOs) are less popular but still more common than most other regulatory tools; about a fifth of jurisdictions, with 28 percent of the residents and 36 percent of the land area, use APFOs.

Other regulatory tools are far less pervasive than zoning and comprehensive planning. For example, despite the attention focused on urban containment programs like growth boundaries or control measures like building caps and moratoria, this research finds that they are less common than measures linking development to infrastructure capacity. At the national level, only

Table 2. Local Land Use Tools in the 50 Largest U.S. Metro Areas: Share of jurisdictions, population, and land area to which they apply, 2003

		Estimated percent of	
	Jurisdictions	Population	Land
Zoning			
Ordinance in place	91.5	95.3	89.3
Maximum permitted density in zoning ordinance:			
<4 / acre	22.1	5.1	11.8
4–7/acre	16.4	6.6	7.4
8–14/acre	21.5	14.5	15.9
15–30/acre	19.9	20.9	32.9
>30/acre	11.6	48.2	21.3
No zoning	8.5	4.7	11.1
No prototype apt. permitted	30.4	9.2	15.6
No mobile homes permitted	51.2	40.9	18.0
Change in maximum permitted density of more than 10% since 1994:			
Increase	10.5	9.6	7.3
Decrease	8.9	7.1	5.4
Comprehensive plan in place	84.6	84.1	92.1
Urban containment program or policy	16.4	27.1	37.9
Infrastructure tools in place			
Impact fees	37.5	55.6	45.6
Adequate public facilities ordinance	18.6	28.5	36.5
Controls on the pace of development			
Permit cap	2.4	3.5	2.9
Moratorium	3.8	6.5	6.3
Affordable housing programs			
Regulatory incentives	22.9	57.2	29.9
Dedicated funds	14.9	51.6	33.3

an estimated 16 percent of jurisdictions have urban containment programs. However, these jurisdictions do tend to be more populous and expansive than average, with 27 percent of the total metropolitan population and 38 percent of the land in these metropolitan areas.

Only about 2 percent of jurisdictions, with 4 percent of the residents and 3 percent of the land area, have permit caps. The most serious moratoria—those that apply to the entire jurisdiction and had lasted longer than 2 years by 2003—are only modestly more common, affecting 4 percent of the jurisdictions with 6 percent of the population and land area.

Finally, we estimate that about 23 percent of jurisdictions have an incentive-based affordable housing program of some kind and that 15 percent of jurisdictions have a dedicated source of funds for affordable housing. However, the jurisdictions that support affordable housing with these programs and funds are the larger cities, boosting the programs' impact. Those with regulatory programs account for 57 percent of the population and 30 percent of the land area, and the ones with dedicated housing funds include 52 percent of the population and 33 percent of the land.

2. But the presence of these land use tools varies greatly across the country. Northeast and Midwest metropolitan areas use land use regulation to exclude while those in the West are more accommodating, with more regulations designed to affect the pace and shape of development.

This analysis makes clear that not all metropolitan areas use the same approach to land use regulation. And there are often wide variations within metropolitan areas when these cross state boundaries.

However, some clear commonalities can be observed in the four large regions of the country: the Northeast, Midwest, South, and West. The types and sizes of jurisdictions in these regions, their governance structures, the times in which they grew and developed, their current growth rates and pressures and their particular regional preferences and traditions, all affect the land use tools they employ.

For example, metropolitan areas in the West clearly distinguish themselves from the rest of the nation—the Northeast and Midwest particularly. Metropolitan areas in the West lead in terms of percent with a comprehensive plan. They have, by far, higher densities than the other metropolitan areas. They utilize containment, and infrastructure regulations much more frequently. And they have many more programs designed to boost the supply of affordable housing.

Breaking this down by the individual land use tools clearly illustrates these differences.

Zoning. As figures 1 and 2 reveal, jurisdictions in Northeast and Midwest metropolitan areas greatly restrict densities while those in the South and West are more much more accommodating. In almost every jurisdiction surveyed in the West, our prototypical apartment complex would be allowed either by right or by permit.[35] Almost half of the jurisdictions in the Northeast would ban it entirely.

Adding these trends up reveals a broader picture of what it means for a jurisdiction to be "exclusionary". For the purposes of this survey, an exclusionary jurisdiction is one that maintains solely low densities (no housing anywhere greater than 8 dwellings per acre) and would

Map 1. Dominance of Exclusionary Land Use, by metropolitan area (or portion)

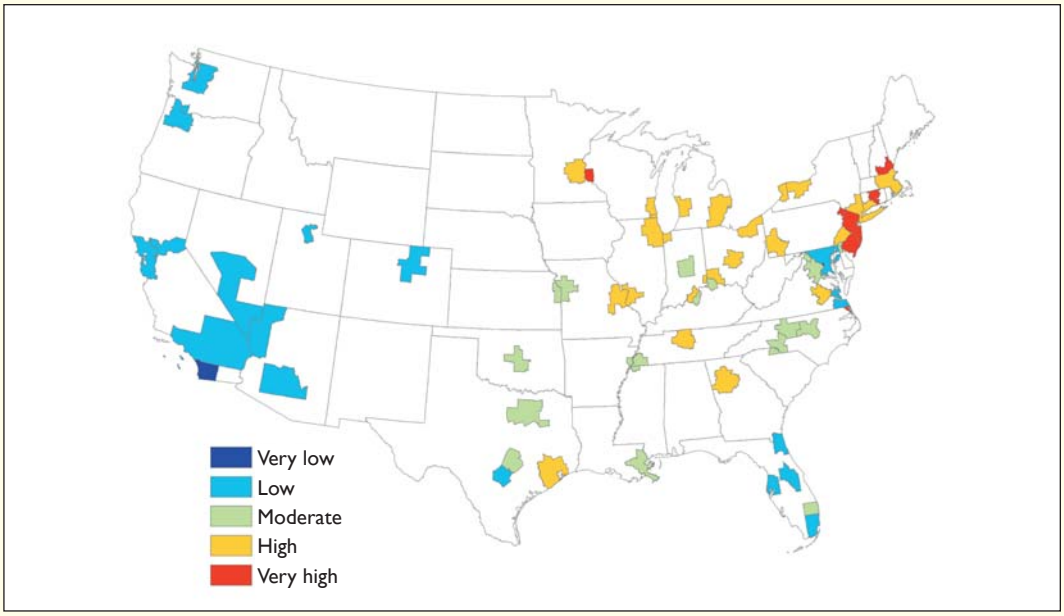


Figure 1. Percent of jurisdictions with zoning ordinances with specified maximum residential density

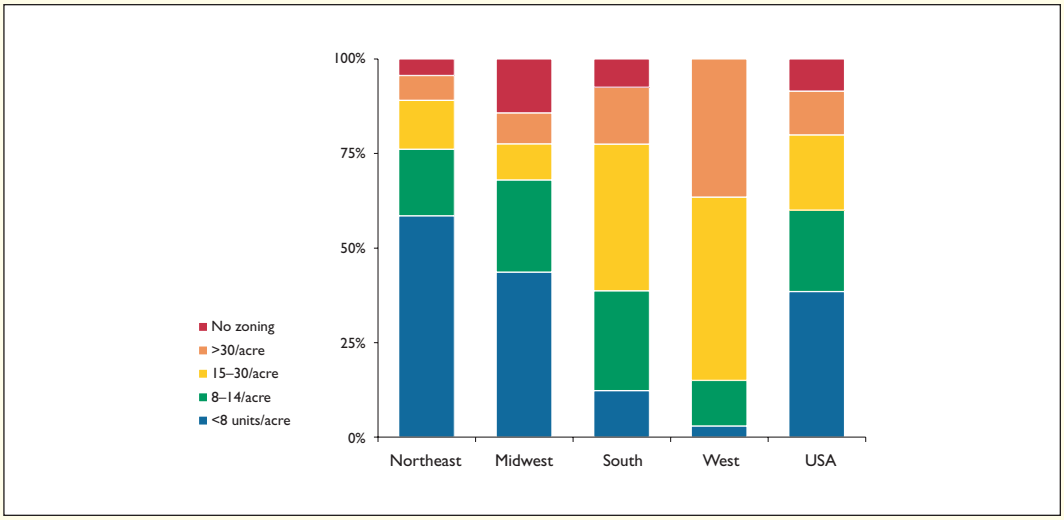
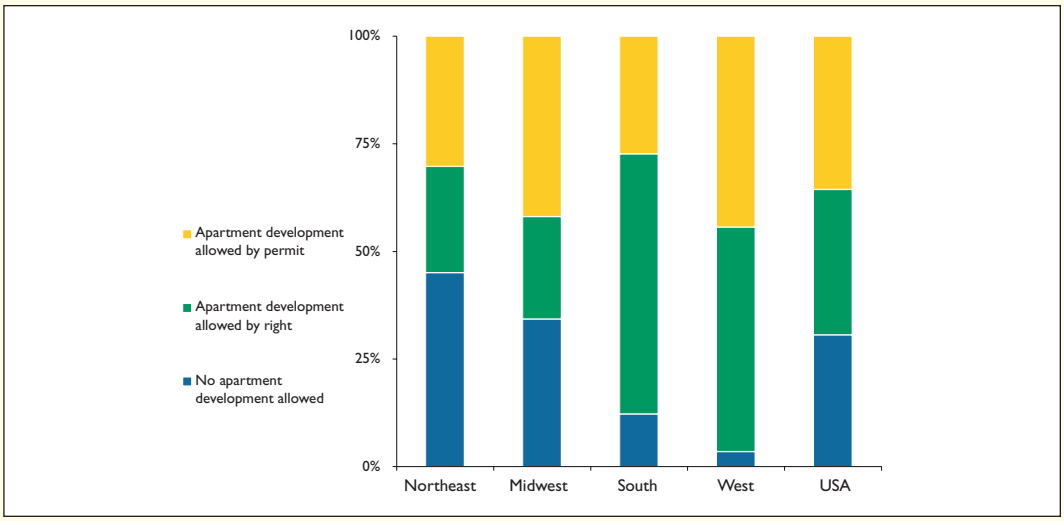


Figure 2. Percent of jurisdictions that would allow a two-story, 40 unit apartment building on a five acre lot

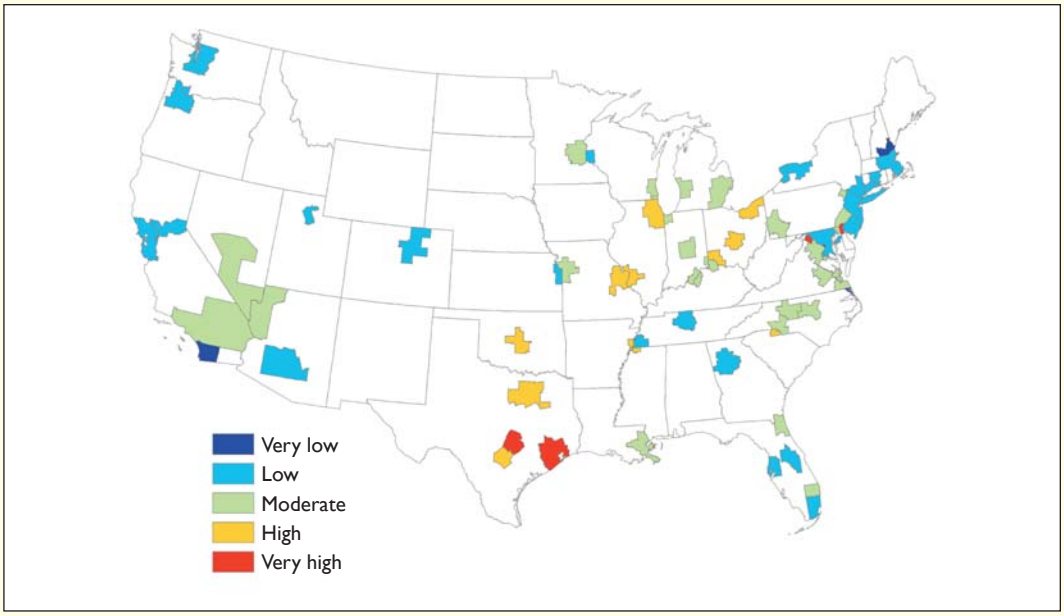


bar our hypothetical apartment building by right or special exception.

Map 1 clearly illustrates that when coded by the prevalence of exclusionary land use, metropolitan areas in the Northeast dominate the landscape. The entire state of New Jersey (which is part of two metropolitan are as: New York in the north and Philadelphia in the south) is visible as a place with a very high incidence of exclusionary land use, along with those places in the Hartford metropolitan area and the New Hampshire suburbs outside of Boston.

The list of the least exclusionary areas is dominated by Western metropolitan areas like San Diego, Salt Lake City, Seattle, Phoenix, Denver, and San Francisco; as well as several in

Map 2. Absence of Zoning, by metropolitan area (or portion)



Florida: Miami, Tampa, and Jacksonville. In fact, no Western metropolitan area, or state share of metropolitan area, ranked in the top three-fourths of all 73 areas considered in this survey ranked by dominance of exclusionary land use. By contrast, no Northeastern metropolitan area ranks in the bottom 60 percent.

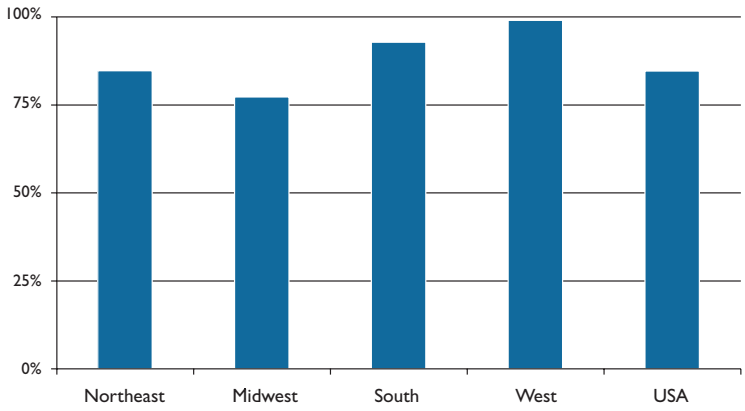
Another zoning factor we examined, the absence of zoning, also breaks down sharply by region with the Midwest leading in terms of the percent of jurisdictions (14) without zoning codes.[36] While almost no jurisdiction surveyed in the West is without zoning (Map 2). The Northeast (4 percent) and South (7 percent) are also below the national figures.

The low figures for the South may be somewhat surprising given the dominance of Texas metropolitan areas on the list of individual places that eschew zoning altogether. Houston is famous for its lack of zoning, but Austin, San Antonio, and Dallas also score very high in this regard.[37] San Diego, the New Hampshire exurbs of Boston, the North Carolina exurbs of Norfolk, and the District of Columbia rank lowest on the no zoning factor.

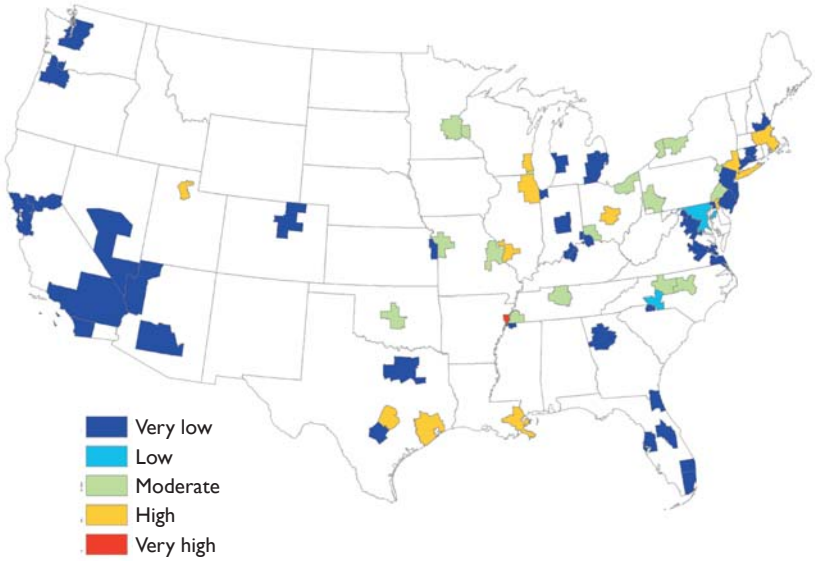
Comprehensive Planning. The high percentage of jurisdictions with comprehensive plans in place is understandable since in many states, comprehensive planning is mandatory. In total, 85 percent of jurisdictions have them. (Figure 3 and Map 3). There are 32 areas in which all the jurisdictions had comprehensive plans and another five in which comprehensive plans were almost ubiquitous. The West leads this group: 99 percent of all jurisdictions have a comprehensive plan. The only Western metropolitan area that scored low was Salt Lake City. Planning is also weak in the Houston, Milwaukee, New Orleans, and Chicago metropolitan areas and in New York City, which does not have a comprehensive plan.

Containment. The highest-ranking metropolitan areas on the containment factor are those in which state law requires containment: Portland, Seattle, and Nashville (Figure 4 and Map 4). Denver also ranks very high, thanks in part to the use of greenbelts in Boulder County and to a voluntary regional plan coordinated by the regional council of governments.[38] With few exceptions, the list of metropolitan areas where urban containment policies are common is dominated by the South and the West. The lowest-ranking major metropolitan areas are Hous-

Figure 3. Percent of jurisdictions with a comprehensive plan, by region



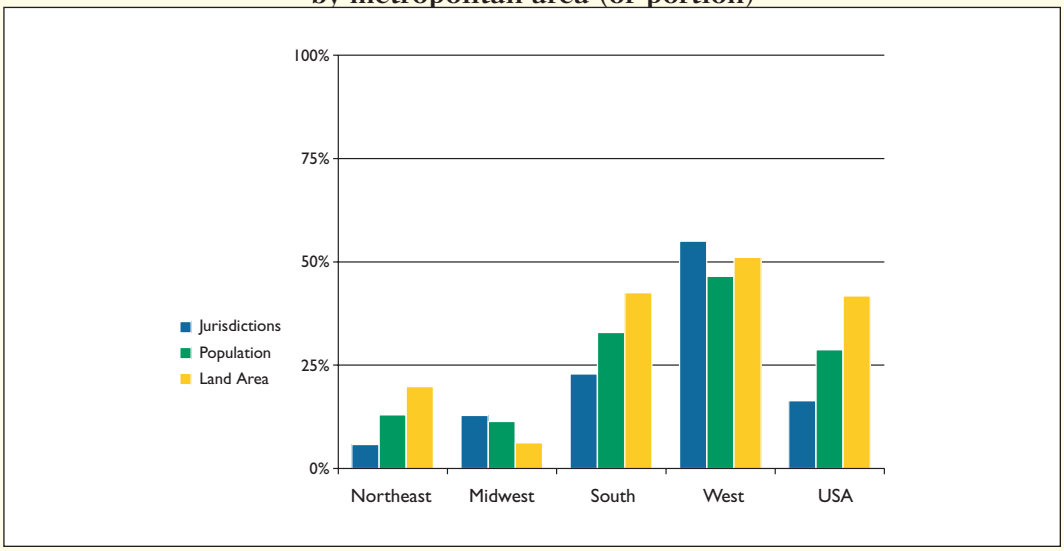
Map 3. Absence of Comprehensive Planning, by metropolitan area (or portion)



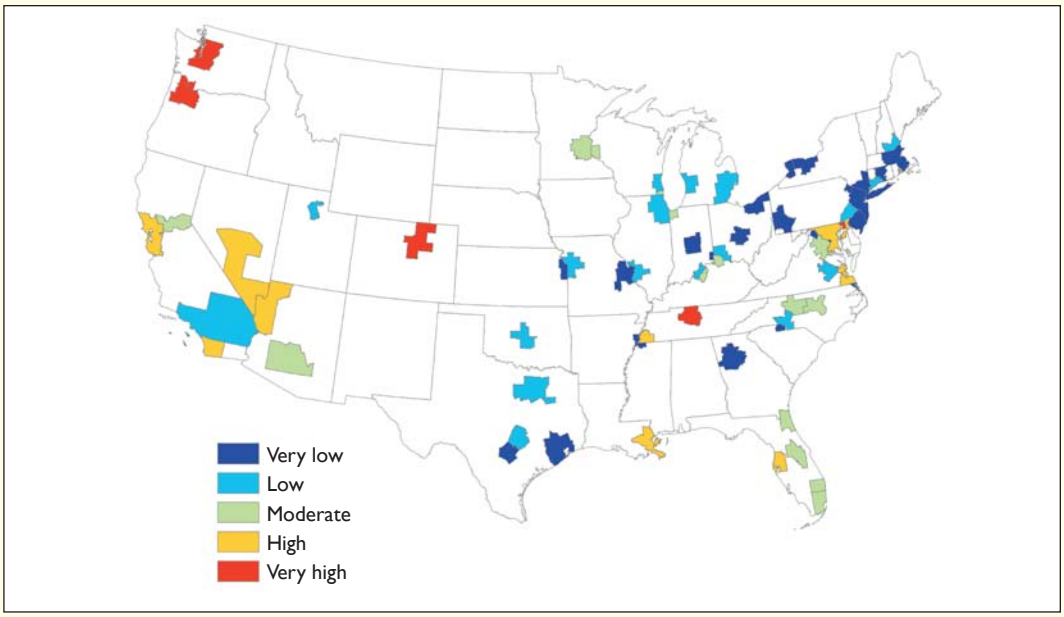
ton, Atlanta, Buffalo, and Indianapolis.

Although the percent of jurisdictions with containment policies in place in the West (55) is more than twice as high the figure for the South (23), the percent of land area affected by the containment policies is much closer (51 percent in the West, 43 percent in the South). Simi-

Figure 4. Percent of jurisdictions with urban containment devices, by metropolitan area (or portion)



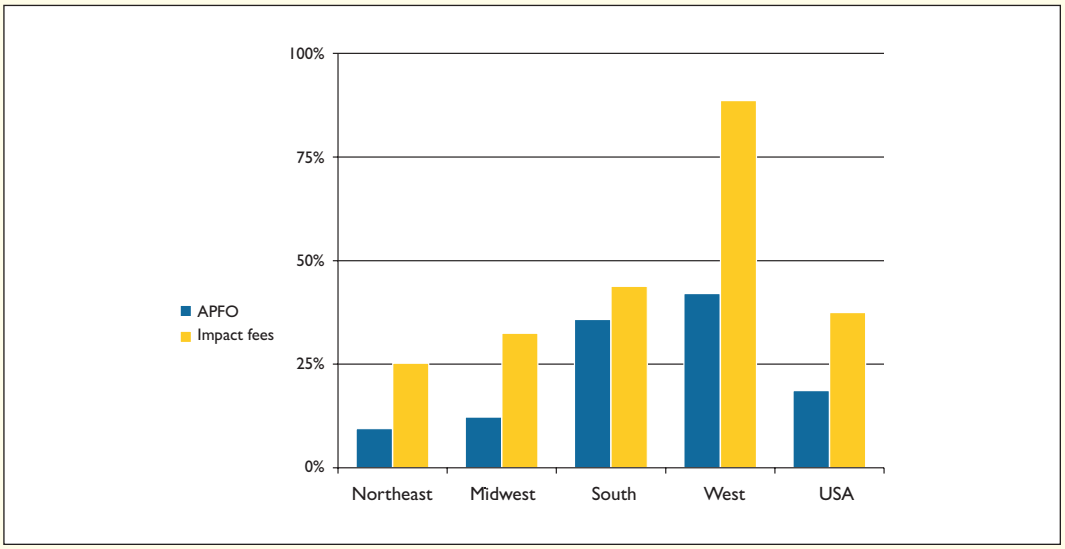
Map 4. Use of urban containment devices, by metropolitan area (or portion)



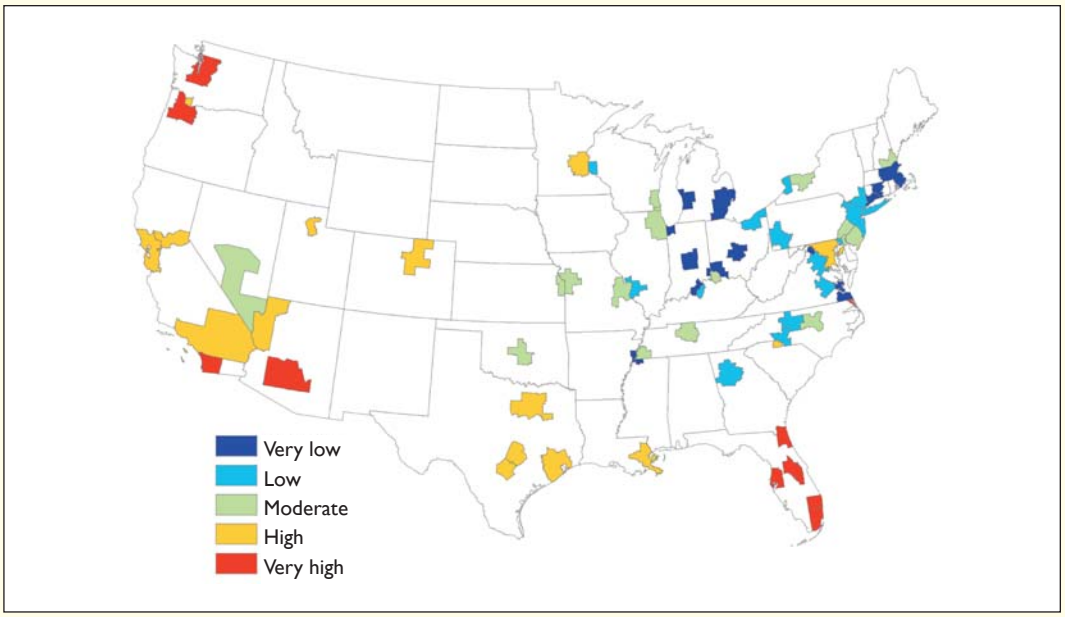
larly, while the percent of Midwestern jurisdictions with containment policies (13) is twice that of those in the Northeast (6), the percent of population covered is slightly higher in the latter (11 vs. 13 percent.)

Infrastructure Regulation. The percent of jurisdictions with control on infrastructure

Figure 5. Percent of jurisdictions with control on infrastructure capacity

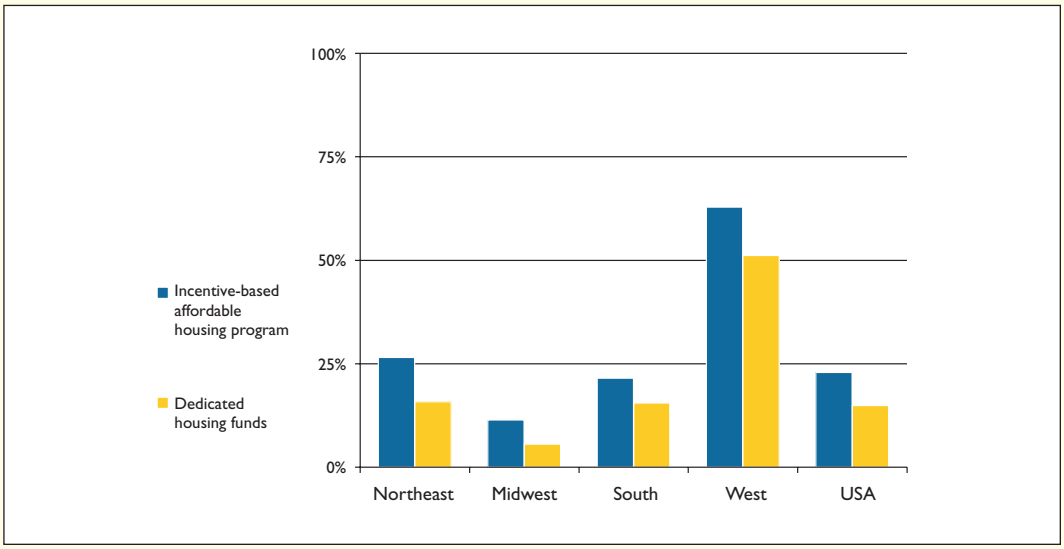


Map 5. Use of infrastructure regulations, by metropolitan area (or portion)

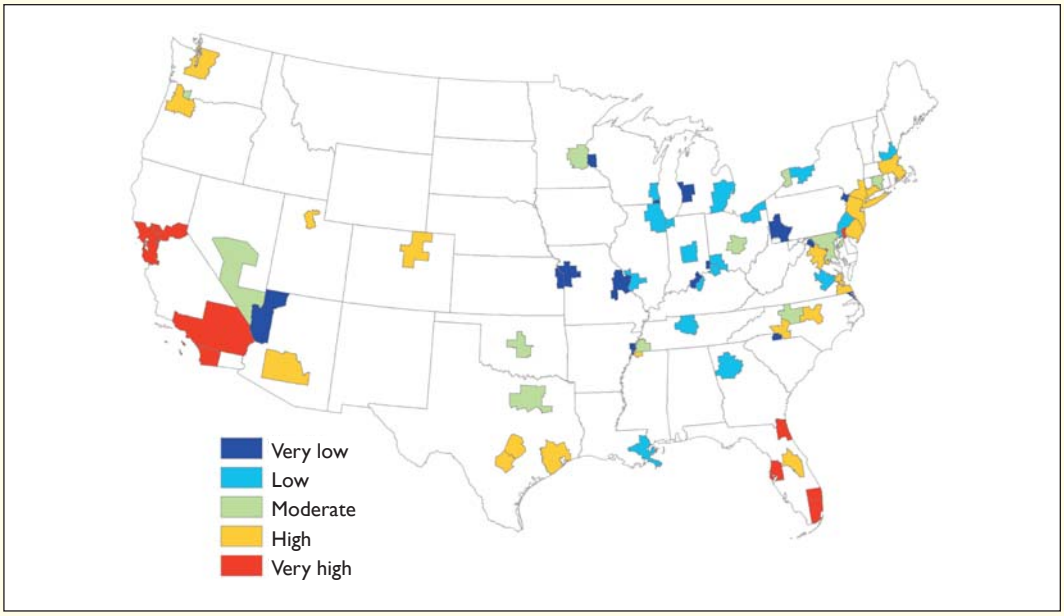


capacity is highest in the West for both impact fees and adequate public facilities ordinances (APFO) (Figure 5 and Map 5). Nearly 90 percent of Western jurisdictions use impact fees, twice as high as the share of jurisdictions in the South. However, the highest-scoring areas on the impact fee factor are those in Florida, which mandates concurrency between infrastructure

Figure 6. Percent of jurisdictions with affordable housing programs



Map 6. Local regulatory programs and funds for affordable housing, by metropolitan area (or portion)



and development and prescribes the use of impact fees.[39] Phoenix and San Diego also score high. The major metropolitan areas that rank lowest include Indianapolis and places in Virginia where under current law the use of impact fees is limited to roads in only a few jurisdictions.

Jacksonville, which ranks slightly below the other Florida metropolitan areas on the impact

fee factor, scores highest on the APFO factor. Other high-scoring metropolitans on the APFO factor include the southern metropolitan areas of Louisville, New Orleans, and the Maryland portion of Washington. The major metropolitan areas that score lowest on this factor include Salt Lake City, Austin, San Francisco, and Sacramento.

Growth Control. Few land use tools generate as much interest and controversy as sharp growth controls like caps on building permits and growth moratoria. Indeed, in some Western areas the permit cap is a very common regulation, adopted by an estimated 42 percent of jurisdictions in metropolitan Denver and an estimated 33 percent in metropolitan Las Vegas. They are also becoming more common around Boston, with an estimated 20 percent of the jurisdictions employing them. Because several very high-cost housing markets have many jurisdictions that have experimented with permit caps, this leads many observers to conclude, probably correctly, that they create serious housing shortages. The professional and political backlash against them has therefore been intense. But beyond these metropolitan areas, growth caps are quite rare and in fact completely absent from 33 of the 50 metropolitan areas. This combination of intense backlash and scarcity parallels the case of strict rent control; both strict rent control and permit caps at their most extreme provide economists with textbook examples of overregulation and its negative effects, but neither regulation is all that common at the national level.

Affordable Housing. Outside of the West, there is only modest local action in developing incentive-based affordable housing programs, and even less in establishing dedicated housing funds to support affordable housing (Figure 6 and Map 6). In the West, nearly two-thirds of the municipalities have incentive programs and half have dedicated funds established. No other region comes close to these figures. Individually, the highest-ranking area on this factor is the District of Columbia, with the four California metropolitan areas filling out the top ranks. Outside of Las Vegas, no Western place ranks in the bottom half of metropolitan areas nationally. The Florida metropolitan areas also rank fairly high. The lowest-ranking major areas on this factor include Midwestern places like Kansas City, St. Louis, and Grand Rapids.

3. Several important typologies of places emerge that associate metropolitan areas with each other based on their combination of land use regulations.

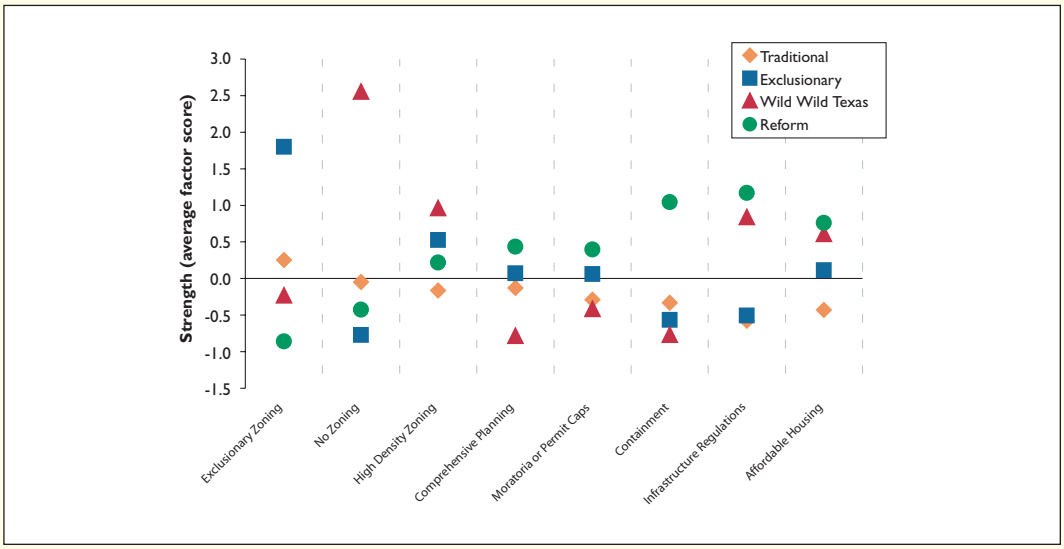
Several studies in the past have ranked or rated the degree of land use regulation in metropolitan areas.[40] Such ratings have been shown to correlate with housing prices; more highly regulated regions, for a variety of reasons, have higher housing and land prices.

But a simple rating system is not sufficient to identify relationships between regulation and such outcomes as land consumption or regional housing opportunity for low-income residents. For example, a simple scan of the results of this survey suggests that although metropolitan Boston, New Jersey, California, and Florida all occupy positions at or near the top of national rankings of regulatory restrictiveness, their regulations differ substantially from one another.

The cluster analysis, which built on the factor analysis, yielded a reasonable 12-cluster solution that serves as the basis for a description of families of land use regulation in the 50 largest metropolitan areas. These 12 families fall into four orders (see Table 3, Figure 7, and Map 7).

This analysis refers to each of the 12 clusters as a *regulatory family.* Since the factor analysis included data on the share of jurisdictions, population, and land area covered by each regulation or policy, a combination of regulations will be most clearly "dominant" when it applies to many jurisdictions covering a large share of the land area and population of a metropolitan area. Each of the families, however, resembles at least one other, so that four regulatory orders also can be identified at a higher level of generality. (See the companion paper for a more detailed description of the individual metropolitan areas.)

Figure 7. Regulatory Orders by Strength of Land Use Tool



Map 7. Typology of Land Use Regulations, by metropolitan area (or part)

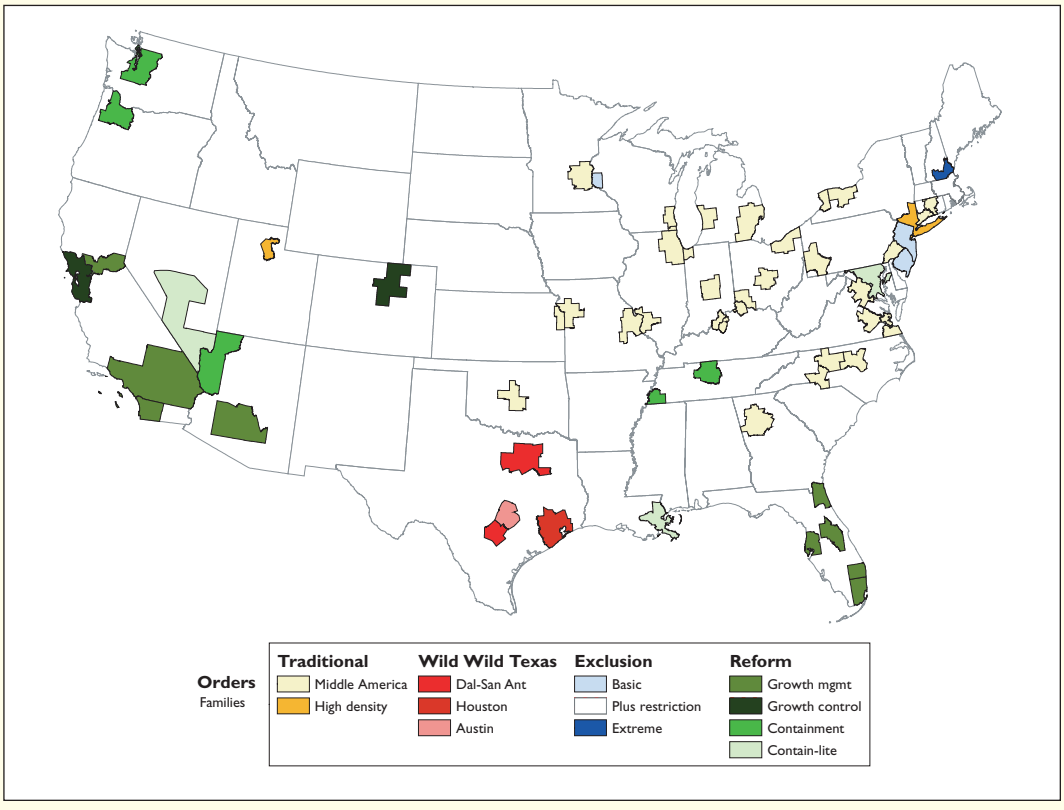


Table 3. Typology of Land Use Regulations, by Orders and Families, Major U.S. Metropolitan Areas, 2003

Regulatory Orders and Families	Number of Metropolitan (or Sub-metropolitan) areas	Total Population
Traditional	34	75,483,321
Middle America	32	61,459,742
High Density	2	14,023,579
Exclusion	5	14,621,514
Basic Exclusion	3	8,563,688
Exclusion with Restriction	1	5,287,393
Extreme Exclusion	1	770,433
Wild Wild Texas	4	12,733,518
Austin	1	1,249,763
Houston	1	4,669,571
Dallas/San Antonio	2	6,814,184
Reform	19	59,340,464
Containment	5	7,838,637
Containment-Lite	3	7,496,135
Growth Management	9	34,384,824
Growth Control	2	9,620,868

Traditional. The traditional regulatory order contains the largest number of metropolitan areas, with a total of 34 metropolitan area components (i.e., portions of metro areas within the same state) and residents. As shown in Map 7, all these places are in the Midwest, Northeast, and South with the exception of the Salt Lake City metropolitan area. In most of these states, the laws that govern land use planning have not been revised significantly since the promulgation of the Standard State Zoning Enabling Act and the Standard City Planning Enabling Act of the 1920s. Planning and zoning remains mostly voluntary, few local governments engage in innovative land-use regulation, and state review of local plans is mostly absent. These are also highly "fragmented" metropolitan areas with large numbers of local governments, each of which regulates land use based mainly on its own calculus. The Traditional order has two regulatory families: Middle America and High Density.

Middle America. The Middle America family includes 32 metropolitan areas and components. It includes metropolitan areas such as Chicago, Buffalo, Pittsburgh, Norfolk, and Atlanta. Because it includes so many metropolitan areas, it approximates the national average on most regulatory factors, but three ways in which it departs from the national average are telling.

First, these metropolitan areas have more restrictive densities in their zoning ordinances than the national norm. While the share of jurisdictions with low density only zoning (a maximum residential density permitted by zoning ordinance below 8 units per acre) and permissive high-density zoning resemble the national average, the share of the land area and population in these jurisdictions is heavily weighted toward the low end of the density scale. On average, about 42 percent of the land area and 20 percent of the population in Middle America metropolitan areas have low density-only zoning. This is substantially greater than the national averages of 19 and 11 percent, respectively.

Second, Middle America has more modest commitments than the national average to infrastructure-based growth management. On average, 27 percent of the jurisdictions, 28 percent of the population, and 20 percent of the land area of Middle America is covered by impact fees.

The national average is 37, 57 and 47 percent respectively. The use of APFOs in Middle America similarly falls well below national averages.

Third, the Middle America metropolitan areas make very little use of affordable housing mechanisms. Although the share of jurisdictions using incentive programs or housing trust funds departs little from the national average, the average share of the population and land area in jurisdictions covered by incentive programs and dedicated funding sources in Middle America is about half the national average. This is perhaps because the central cities of these metropolitan areas tend to have large numbers of low cost rental units and have grown slowly until recently. This makes regulatory approaches to affordability less attractive than the use of standard federal subsidies. In short, it appears that the large and medium sized cities as well as the unincorporated areas of Middle America are less hospitable to both high density and affordability than the national average.

High Density. The second family in the Traditional order is distinguished from the Middle America family mainly by its openness to high density residential development, but it resembles Middle America in its moderate adoption of new planning tools. This family includes only two metro areas: the portions of the New York metropolitan area in New York state and the Salt Lake City metropolitan area.

In this family, on average, the share of jurisdictions that allow densities above 30 dwellings per acre is double the national average. The high-density population and land area in these metropolitan areas also exceed the national average. Furthermore, an average of one-quarter of the population and 43 percent of the land area are in jurisdictions where maximum permissible density increased by over 10 percent since 1994, compared with just 10 and 7 percent for the national average. The share of jurisdictions and land area in jurisdictions with impact fees also exceeds the national average in this regulatory family.

However, the high-density family also differs from the national average in its relatively low use of planning tools. As mentioned, New York City itself lacks a comprehensive plan and New York state does not require local governments to adopt comprehensive plans. On average 82 percent of the jurisdictions in these areas are covered by comprehensive plans, but only half the population and land area is. Urban containment and adequate public facilities ordinances, both of which perform better in the presence of comprehensive planning, are also comparatively weak in this family.

Exclusion. We call the second regulatory order "exclusion" for its extensive use of measures that restrict apartment construction. They also share a comparatively low use of tools to require that development "pay its own way." Four of the five metropolitan components in this family are suburban components of major cities (the Wisconsin suburbs on the far eastern fringe of metropolitan Minneapolis; the New Jersey suburbs of Philadelphia and New York; and Boston's New Hampshire suburbs); the fifth is the Massachusetts component of metropolitan Boston. Together they account for over 14 million residents. This order has three families.

Basic Exclusion. The first exclusionary family includes the entire state of New Jersey and the jurisdictions in the far eastern reaches of the Minneapolis metropolitan area in Wisconsin. On average, about two-thirds of the jurisdictions in these areas have low density-only zoning and would prohibit our hypothetical apartment development. These low density jurisdictions account for about half the population and three-quarters of the land area. Furthermore, the share of the population (18 percent) and land area (29 percent) covered by jurisdictions that have reduced permitted density by over 10 percent in the past 10 years is well above the national averages (7 and 5 percent, respectively.) An average of only three percent of jurisdictions containing 9 percent of the population in 3 percent of the land area would allow development above 30 dwellings per acre.

This family does have higher than average incidence of incentive-based affordable housing among its jurisdictions (32 percent) and land area (34 percent) than the national averages (23 and 30 percent, respectively). This is a consequence of the landmark *Mount Laurel II* ruling on housing affordability and the New Jersey Fair Housing Act, which endorsed the use of inclusionary zoning as an affordable housing mechanism.[41] Since New Jersey's inclusionary zoning institutions have been developed mainly to address growing areas, however, only 41 percent of

the population (on average for the family) is in jurisdictions with incentives, compared with 59 percent nationwide.

Although comprehensive planning is generally at least as common as the national average—thanks probably to New Jersey's planning statute—growth management tools are not widely used in this family, with low incidence of containment mechanisms and infrastructure measures.

Exclusion with Restriction. The second exclusionary family is the Massachusetts portion of the Boston metropolitan area. Nearly half of these jurisdictions, with 28 percent of its residents and about half its land area, would bar our hypothetical apartment development. This level of exclusion is not as high as the Basic Exclusion family, but it still much higher than the national average. Adding to the possibility for exclusion here, however, is the widespread adoption of building permit caps. An estimated 22 percent of jurisdictions, with 14 percent of the population and 22 percent of the land area, use permit caps—one of the highest rates of permit cap adoption in the nation.

Like New Jersey, Massachusetts has legal institutions that permit the "builder's remedy" as an override of exclusionary zoning. Perhaps as a defense mechanism against builders' "Chapter 40B" appeals, as the builder's remedy is known, against local denials for permission to build high-density and affordable housing, a large number of towns in the Boston suburbs (as well as Boston itself) have embraced density bonuses and inclusionary zoning.[42] Over half the jurisdictions, with 60 percent of the population and half the land area, have incentive-based affordable housing mechanisms of some kind.

Planning and growth management tools are weak in the Exclusion with Restriction family, with very low use of impact fees, APFOs, and containment. Only three-quarters of the jurisdictions have comprehensive plans.

Extreme Exclusion. Most exclusionary of all three of these families are the suburbs of Boston in southern New Hampshire, where 84 percent of jurisdictions (47 percent of population, 81 percent of land area) have low density-only zoning and 79 percent (53 percent of population, 77 percent of land area) would bar our hypothetical apartment development. Moreover, like in Massachusetts, permit caps have caught on in the New Hampshire suburbs. An estimated 14 percent of municipalities use caps, accounting for 22 percent of the population and 16 percent of the land area. Permitted density has also fallen in the past 10 years in 19 percent of jurisdictions with 17 percent of the land area.

Comparatively few local governments, with small shares of population and land area, use either regulations or funds to support affordable housing. And although comprehensive planning is ubiquitous in the New Hampshire suburbs, among the growth management tools, only impact fees are as common as the national average.

Wild Wild Texas. The Texas metropolitan areas form a regulatory order of their own. They have in common an unparalleled openness to growth and development. It all starts with zoning. Texas counties are not allowed to adopt zoning, nor can they adopt binding comprehensive plans. Cities are authorized to zone unincorporated land within specified distances of their city limits (up to five miles for the largest cities), but any land outside that extraterritorial jurisdiction is regulated only by minimal subdivision regulation. The variation in the three Texas families is primarily on the degree to which "no zoning" dominates the landscape.[43]

Houston. The Houston metropolitan area is justifiably renowned for its lack of zoning. About 45 percent of its jurisdictions have no zoning, and they include about 90 percent of the land area and population. But the jurisdictions that do have zoning tend to be small enclaves that use zoning to exclude high-density development. Over half of jurisdictions would bar our hypothetical apartment development, but they include only 9 percent of the population and 20 percent of the land area in the region.

Planning is weak in Houston; only 63 percent of the jurisdictions, with just over a quarter of the population, have comprehensive plans. But other growth management tools, especially those to manage infrastructure, are common among the larger jurisdictions, with three-quarters of the population living in incorporated jurisdictions with APFOS and 85 percent of the population with impact fees.

Dallas and San Antonio. In these two metropolitan areas, unlike Houston, the incorporated cities tend to have zoning, and because most of the growth has occurred in or near incorporated limits, much more development is subject to zoning. Also unlike Houston, very few cities use exclusionary devices or would bar our hypothetical apartment complex. Infrastructure regulation is commonplace among the cities, with around three-quarters of the municipalities using impact fees, especially the larger ones; about a third use APFOs, but they tend to be smaller jurisdictions. Other growth management tools are less common and permit caps are not used. About a quarter of the cities, with an average of about 75 percent of the municipal population, use affordable housing programs.

Austin. The degree of regulation in Austin is not too dissimilar from the Dallas-San Antonio regulatory family. The main difference is in the use of comprehensive plans. Most of the jurisdictions we surveyed in these three metropolitan areas have a comprehensive plan, including the large ones. About 30 percent of the population of the metropolitan area and 46 percent of the land area is covered.[44]

Reform. The final regulatory order includes four very distinct families with a range of metropolitan areas that use tools beyond comprehensive plans, zoning, and subdivision regulation to manage and control land use. They differ mainly in the extent to which they include local affordable housing measures, in their emphasis on containment or infrastructure regulation, and in the importance of building-permit caps in the regulatory toolkit.

Growth Management. The Growth Management family includes nine metropolitan areas: five in Florida, Phoenix, and three in California. It is so called because of the high use of containment policies and infrastructure management as logical counterpoints to zoning ordinances that permit comparatively high-density housing development.

This family features universal adoption of comprehensive plans. Also, on average over a quarter of the jurisdictions, with 41 percent of the population and 55 percent of the land area, have containment mechanisms. An average of 88 percent of the jurisdictions (88 percent of population, 86 percent of land area) impose impact fees, and 69 percent have APFOs.

A third of the jurisdictions, with an average of 62 percent of the population and 46 percent of the land area, have a residential density zoning category that exceeds 30 dwellings per acre, and an average of 17 percent of jurisdictions have increased their permitted maximum density by over 10 percent between 1994 and 2003. Only five percent of jurisdictions dropped their maximum density by more than 10 percent. And just three percent of the population in these places—containing only one percent of the land area—would bar the multi-family apartment development.

Moreover, over half the jurisdictions on average in the growth management family have affordable housing programs, with an average of 45 percent using dedicated funds for affordable housing. These tend to be populous and extensive jurisdictions, so that 75 to 80 percent of the population of the average growth-management metropolitan area lives in jurisdictions with active housing programs.

Growth Control. The second reform family, Growth Control, is made up of just two metropolitan areas: Denver and San Francisco. This family closely resembles the Growth Management family in the extensiveness of planning, its zoning framework, the importance of impact fees, and its use of affordable housing programs. But unlike Growth Management, the Growth Control family ranks first in the use of permit caps: a quarter of jurisdictions on average use them, accounting for about a fifth of the population and land area. The Growth Control family also makes more extensive use of containment (62 percent of jurisdictions, 83 percent of land area) than the Growth Management family. APFOs, by contrast, rank less important on average than in any of the Reform families; this suggests that APFOs and permit caps may be substitutes for one another.

Containment. This family includes Seattle, Portland, Nashville, Memphis, and the Arizona component of the Las Vegas metropolitan area. As its name indicates, this family depends much more than the others on containment mechanisms, averaging 80 percent of jurisdictions (85 percent of population, 87 percent of area), largely a consequence of mandates in state growth management laws. Other land use tools are weaker on average in this family than in the Growth

Management and Growth Control families. A few Containment jurisdictions—all of them in the Tennessee metros—lack comprehensive plans. Two-thirds of Containment jurisdictions use impact fees on average, and 45 percent use APFOs, compared with 90 and 70 percent in the Growth Management family. Only a quarter of jurisdictions allow densities to exceed 30 dwellings per acre, on average, compared with nearly 40 percent in the Growth Control family.

The Containment family also has a weaker commitment to affordability than other reform families. An average of 12 percent of jurisdictions on average would exclude our hypothetical apartment development, and under 20 percent—with less than half the population and only 30 percent of the land area—have a regulatory affordable housing program.

Containment Lite. The final reform family includes the Maryland portion of the Washington, DC metropolitan area, New Orleans, and the Nevada portion of metropolitan Las Vegas. As suggested by the title, "Containment Lite" means a moderate level of containment among the Reform families: 52 percent of jurisdictions on average, with 65 percent of the population and land area. But it also involves a more modest commitment to other growth management tools and a more active growth control agenda. A third of jurisdictions have impact fees on average and two-fifths have APFOs, much lower levels than in the other reform families. Low density-only zoning is rare, as is the exclusion of the hypothetical apartment complex, but permissive high-density zoning is less common than in the growth management or growth control families (25 percent of jurisdictions, 64 percent of population, 29 percent of land). While none of the metropolitan areas had substantial reductions in permitted density, neither did any of them permit substantial increases. And finally, an average of 18 percent of the jurisdictions used permit caps and 21 percent used moratoriums in the Containment Lite family.

4. Densities in metropolitan areas with Traditional land-use regimes are falling much faster than areas elsewhere.

Ultimately, the typology of land use regulations primarily matters in that it can help us understand each type's impact on growth patterns and household opportunities. We can identify tentative associations between regulatory families and important on-the-ground conditions. And it is certainly true that a particular regulatory family may be as much a response to low-density, decentralizing growth patterns, unaffordable housing, or concentrated central-city poverty as a cause of any of these problems. But even associations are suggestive and interesting, calling for more exhaustive research about causes and effects of unwanted outcomes.

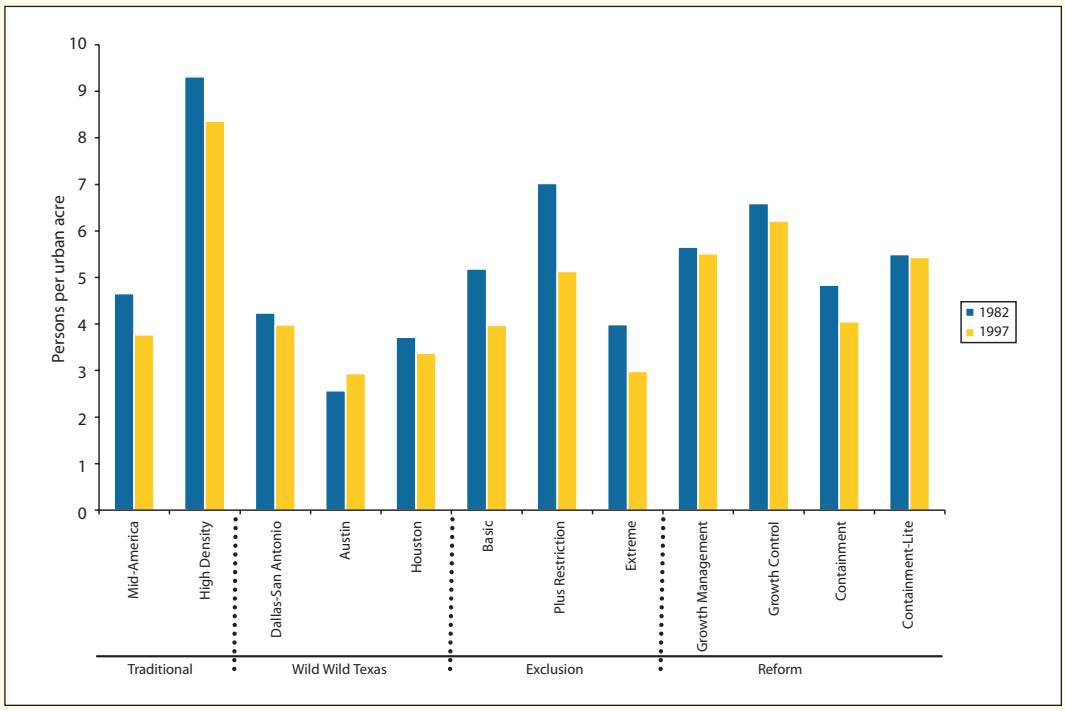
A first important outcome of an order or family of land-use regulation is the pattern of land development, which—when undesirable—is often called "sprawl." Between 1982 and 1997, the amount of urbanized land in the U.S. increased over 20 percent.[45] But land consumption varied dramatically among metropolitan areas, with some regions retaining or increasing their density and others losing density at a rapid pace.[46] What relationship is there between density, the change in density, and the regulatory families?

The regulatory families with the highest densities in both 1982 and 1997 included, naturally, the High Density family (mean density of 8.4 persons per urban acre in 1997), the Exclusion with Restriction family (5.1 persons/urban acre), and three of the four Reform families: Growth Management (5.5 persons/urban acre), Growth Control (6.2 persons/urban acre), and Containment Lite (5.4 persons/urban acre) (Figure 8).

Four regulatory families had moderate densities in both 1982 and 1997, ranging from 4.2 to 5.2 persons per acre in 1982 and from 3.0 to 3.5 in 1997: Middle America, Basic Exclusion, Dallas-San Antonio, and Containment. Middle America, with 32 cases, had three high outliers: Chicago, Philadelphia, and Buffalo, all of which had density between 5.5 and 6.5 persons per urbanized acre in 1997. Extreme Exclusion (Boston's New Hampshire suburbs), Austin, and Houston all occupy lower positions in the range of densities among the families, at between 2.5 and 4.0 persons per acre in 1982 and between 2.9 and 3.4 persons per urban acre in 1997. All these low-end families, however, fall well within the range of density in both the containment and Middle America families.[47]

Changes in density (1982–1997) have somewhat different associations with family types. The Texas families and the Reform families all lost density at lower rates than the families in the

Figure 8. Density (persons per urban acre), Regulatory Families, 1982 and 1997



Traditional and Exclusionary orders. Considering that the Texas families began with extremely low density, especially Austin, they had many opportunities for infill and increasing density, especially in the face of rapid growth. Dallas and San Antonio lost about 4 percent and 7 percent of their density, respectively; Houston lost 9 percent; and Austin gained 14 percent. The big surprise is that the figures for the three densest Reform families (excluding "Containment"), where density was already fairly high in 1982, did not decline much in the 1980s and 1990s. The Growth Management family lost 2 percent on average and the Growth Control family lost 6 percent. The Containment Lite family was essentially unchanged.

The Traditional and Exclusionary orders lost substantial density in the 1980s and 1990s. Nowhere was this clearer than in the Exclusionary order, where density declined by averages between 23 and 27 percent. The loss was almost as great in the Middle America family, where the average density decline was 19 percent.

The Containment family is the exception to the rule that Reform families tended to lose less density than the Exclusion families. Density dropped an average of 15 percent in the five Containment metro areas. The decline is a consequence of the inclusion in this family of Memphis and Nashville, where density dropped 28 and 35 percent, respectively. Neither of these two regions would have registered as "Containment" had the survey been taken between 1982 and 1997, because Tennessee's mandate for urban growth boundaries did not become law until 2001.[48] But even Portland and Seattle, where containment policies have had a longer run, lost more density than most of the other Reform families did on average.

How do we explain these differences? Traditional zoning continues to dominate the Northeast and Midwest, where urbanization has left a legacy of high-density urban cores. With the exception of New York, where redevelopment and immigration have led to new growth in the central city, the regions that rely on traditional zoning are losing that historic density at very rapid rates. The density loss is especially acute in regions where exclusionary land use prevails and is combined with controls on the issuance of building permits.

The Wild Wild Texas order, where zoning is less powerful than elsewhere but where "pay-as-you-grow" has taken root broadly, tend like the Traditional zoning families to have fairly low base density, but they also have not lost as much density as some of the faster-growing metropolitan areas in the Middle America family. For example, Austin's density shot up by 14 percent, leading it to surpass more exclusionary Atlanta between 1982 and 1997. Houston, the least-zoned region in the U.S., lost less than 10 percent of its density.

Reform families tend to be strongest in higher-density areas, and vice versa. The cause-effect relationship here is unclear and probably works both ways. A combination of "pay as you grow" regulations on infrastructure, permissive high-density zoning, and urban containment is likely to increase density over the long run. But high density in the established urban fabric can also make urban containment and infrastructure controls politically more expedient and necessary because residents in high-density areas would logically press for measures to give them relief. Urban growth boundaries tell urban residents that they can get beyond the endless sea of development into valued open spaces, and infrastructure controls mitigate the impact of density.

The Containment family stands out as unusual within the Reform order for having lower density and for having lost more density in the 1980s and 1990s. Again, the cause and effect relationship here is important to consider in future research. Rapid sprawl in Tennessee may have played some role in that legislature's adoption of urban growth boundaries in the early 2000s. Similarly, Washington did not adopt its growth management act until 1990, exactly in the middle of the 1982-1997 period over which land use data are available. Several observers, too, have noted that Portland's urban growth boundary was defined with substantial room for expansion in the early 1980s.[49] It is possible, then, that containment has not had adequate time to work. But it should also be recalled that the Containment family is less active at regulating infrastructure and less accommodating to high-density zoning than the other reform families. Further investigation should be done to determine whether Containment regions could accommodate or encourage higher density by pursuing more aggressive increases in permitted density.

5. Central cities are high-value places for residents of the Texas and Reform areas but frequently contain most of the "neighborhoods of last resort" in Traditional and Exclusionary places.

To some, the term "central city" conjures up bleak images of abandonment and deterioration. Such images, however, do not apply in all U.S. metropolitan areas. Research shows that as of 1990, the majority of 508 central cities were "healthy," including subsets of "competitive," "sunbelt," and "knowledge" central cities.[50] Among the "stressed" central cities about 11 percent of the total was "stereotypical" distressed central cities and about another third were "manufacturing" central cities.

It is likely that regulatory orders and families shape the central cities of metropolitan areas in which they're located.[51] To identify the extent to which certain kinds of people or households are concentrated in central cities, we computed the poverty rates, percent black, percent Hispanic, percent college educated, and home ownership rates separately for central cities and suburbs of each metro area or component. We then divided the central city percent by the suburban percent to yield an index of concentration. For example, if the poverty rate in the central cities of a metro area was 20 percent while poverty outside the metro area's central city was 10 percent, the central city poverty concentration would be 2.0. If these were reversed, the poverty concentration would be 0.5.

Our research definitely suggests a relationship between regulatory orders and families, on the one hand, and central city opportunity or distress.[52] Central cities in the Traditional and Exclusion areas have very high concentrations of low income people and people of color and low concentrations of college graduates and homeowners. By contrast, the Wild Wild Texas and Reform areas have higher concentrations of college graduates and home owners in their central cities than in their suburbs. And while black and Hispanic residents as well as people living in poverty are still concentrated in the central cities of these metropolitan areas, they are much more dispersed to suburban jurisdictions than in the other two major orders (Table 4).

Concentrated Poverty. On average, in both 1990 and 2000, the Traditional and Exclusionary orders have central city poverty rates three times higher than their suburban poverty rates. In the Detroit, Rochester, Buffalo, Minneapolis, Philadelphia, Hartford, and Milwaukee metropolitan areas —all in the Middle America family—the central city poverty exceeded suburban poverty by a factor of at least four.

The Reform order places occupied the other end of the spectrum, with an average poverty concentration index of just 1.9: still uncomfortably high, but very much lower than in the Traditional and Exclusionary orders. Las Vegas, San Diego, West Palm Beach, and Phoenix all had poverty concentration indices below 1.5. In 2000 the only non-Reform family metropolitan area with poverty concentration below 1.5 was Charlotte. In Texas, the average level of concentrated poverty was 2.14, substantially lower than in the Exclusionary order but somewhat higher than in the Reform metropolitan areas.[53]

Concentrated Black Population. The Middle America metro areas had far and away the highest concentration of black residents in both 1990 and 2000.[54] The average central city concentration in 2000 was 6.2 times the suburban concentration.[55] Moreover, this high average is not simply an artifact of one or two outliers. Detroit, Indianapolis, Rochester, Buffalo, and Milwaukee all had central city black concentrations of at least 10.0 (i.e., the percent black in the central city was over 10 times that in the suburbs), as did the portion of the Chicago metropolitan area in Indiana (i.e., Gary). The Exclusionary metropolitan areas ranked lower than the Middle America families, with an average value of about 4.2.

Texas had the lowest concentrations of black residents in central cities in 2000, just below 2.0, although this does obscure a range among the four metropolitan areas from 1.0 (San Antonio) to 2.6 (Dallas). The Reform and High Density orders both averaged around 2.7. Among the Reform areas, Portland (6.4), Nashville (4.3), and Jacksonville (4.3) all had concentration indices above 4.0.

Concentrated Hispanic Population. The Exclusionary metropolitan areas had the highest concentration of Hispanic population in both 1990 and 2000 with average values exceeding 4.0 in both years. This high concentration probably relates to the racial composition of the Hispanic population in the Exclusionary metropolitan areas, most of which have Hispanic populations with large shares of Afro-Caribbean Latinos (Puerto Rican, Dominican). The highest-ranking metropolitan area for Hispanic concentration is the portion of the Philadelphia metropolitan area in New Jersey (i.e., Camden). New Haven, Rochester, Hartford, Milwaukee, and Buffalo all had Hispanic concentrations exceeding 5.0 in 2000. The Middle America and High Density families had averages of 2.7 and 2.4 in 2000.

The Reform metropolitan areas had very low Hispanic concentrations, 1.26 on average; those in Texas had somewhat higher concentrations, averaging 1.8. The lowest concentrations were in the Maryland portion of Washington (0.4), New Orleans (0.6), Atlanta (0.7), Portland (0.8), the Illinois portion of St. Louis (0.9), and San Diego (1.0). The presence of several Middle America places in the list of lowest Hispanic concentration balanced the high concentration in the Middle America metropolitans in the Northeast, most of which also have heavy representations of Puerto Rican and Dominican residents among their Hispanic population.[56]

Homeownership. The ratio between central city and suburban home ownership rates does not exceed 1.0 in any of the areas we studied, but it was highest in 2000, on average, in the Reform order, averaging about 0.7, a level that varied little among the four families. None of the other families had a ratio exceeding 0.7. The Middle America family followed the Reform family, with a ratio of 0.7 in 2000; this was about the level of two of the three Wild Wild Texas families (Dallas-San Antonio and Houston), with Austin lagging the other Texas families in part thanks to the large number of college students in the city of Austin's rental housing market. The High Density, Basic Exclusion, and Exclusion with Restriction families all had ratios matching Austin's. Among the Exclusionary families, only Extreme Exclusion had a slightly higher ratio of 0.7.

College graduates. The Reform families also appear at the top in the ratio between central city and suburban percent college graduates in 2000, with an average of 1.1. Only Containment Lite had a ratio below 1.0. In other words, the average central city in these families had

Table 4. Suburban opportunity, major families, 1990 and 2000

Regulatory Order	Regulatory Family	Average ratio of central city to suburbs								
		Poverty		% Black		% Hispanic		% Home Ownership		% College
		1990	2000	1990	2000	1990	2000	1990	2000	2000
Traditional	Middle America	3.08	3.00	8.43	6.25	2.73	2.71	0.70	0.69	0.89
	High Density	3.03	2.96	3.44	2.70	2.94	2.38	0.55	0.55	0.97
Exclusion	Basic Exclusion	3.93	3.49	3.91	3.35	5.00	4.20	0.58	0.56	0.46
	Exclusion with Restriction	3.10	3.12	8.19	6.54	4.60	4.47	0.57	0.57	0.74
	Extreme Exclusion	1.61	1.88	3.03	3.66	2.67	4.09	0.69	0.68	0.83
Wild Wild Texas	Dallas-San Antonio	1.95	2.02	2.36	1.82	2.12	2.00	0.71	0.70	0.91
	Austin	1.60	2.40	2.11	1.74	1.40	1.50	0.58	0.56	1.22
	Houston	2.18	2.11	3.06	2.43	1.80	1.64	0.67	0.63	0.97
Reform	Containment	1.93	2.12	5.47	4.11	0.99	1.59	0.74	0.74	1.12
	Containment Lite	2.47	2.31	2.51	2.25	0.73	0.72	0.77	0.79	0.97
	Growth Control	2.07	2.01	2.86	2.21	1.67	1.55	0.75	0.74	1.03
	Growth Management	1.54	1.59	2.55	2.24	1.23	1.24	0.76	0.75	1.11
	Total	2.63	2.60	6.02	4.61	2.30	2.30	0.70	0.69	0.94

Sources: 1990 and 2000 U.S. census of Population and Housing, Summary File 3 (Poverty) and Summary File 1 (Black, Hispanic), extracted from the State of the Cities Data System, accessed June 2005 at http://socds.huduser.org/index.html

a higher share of college graduates than the average suburban area. Wild Wild Texas, especially Austin, followed the Reform families. The High Density family also has a relatively high (1.0) average concentration of college graduates in the central city, a function not of the attractiveness of New York City (where the ratio is 0.8) but that of Salt Lake City (whose ratio is 1.1) to their regions' college graduates. Exclusionary areas have by far the lowest concentration of college graduates in their central cities, 0.6 on average, a level brought down by the 0.5 ratio in the New Jersey's Basic Exclusion suburbs of Philadelphia and New York.[57] But even Boston's Exclusion with Restriction ratio is fairly low (0.7) compared with the Reform metropolitan areas.

6. Housing prices are highest in the Growth Control and Exclusionary regions.

For at least 20 years, the main metric that has been used to determine the impact—and the acceptability—of land use regulations has been the cost of housing (and usually the sale price of owner-occupied housing). While this study does not evaluate whether particular regulatory approaches cause higher housing costs, it does identify those that associate with systematically higher self-reported housing values and contract rent.[58]

As reflected in Table 5, by far the highest housing prices in the U.S. are in the Growth Control metropolitan areas, owing mainly to the sky-high prices of the San Francisco metropolitan area. The average rent there in 2000 (around the peak of the dot-com bubble) was $970, about $75 higher than the average in the Virginia suburbs of Washington, DC (the next highest region). The average house value in the San Francisco metropolitan area that year was nearly $425,000, a value $130,000 higher than in the next-highest New Haven area. Rents and home prices in metropolitan Denver, the other Growth Control family, are much lower than in San Francisco ($680 average rent, $220,000 average housing value), but the most "growth controlled" parts of the Denver metropolitan area (Boulder County) have high prices that are balanced by lower prices elsewhere in the metropolitan area. Thus it appears inarguable that

Table 5. Housing prices by family, 1990 and 2000

		Average Rent		Average Value	
Regulatory Order	Regulatory Family	1990	2000	1990	2000
Traditional	Middle America	$376	$522	$98,366	$147,768
	High Density	423	658	153,239	225,327
Exclusion	Basic Exclusion	455	598	135,431	177,241
	Exclusion with Restriction	533	677	194,873	249,089
	Extreme Exclusion	521	618	154,400	170,855
Wild Wild Texas	Dallas-San Antonio	371	550	84,147	117,068
	Austin	375	663	91,627	164,223
	Houston	365	547	82,977	124,074
Reform	Containment	377	554	99,221	168,700
	Containment Lite	428	580	114,070	160,105
	Growth Control	536	825	194,739	322,102
	Growth Management	482	640	139,857	183,885
	Total	$409	$570	$113,535	$165,747

the Growth Control regulatory family, which combines a series of locally imposed and generally uncoordinated urban growth boundaries with widespread building permit caps, associates with high housing prices.

The other Reform families associate much less strongly with high housing prices. Average rent in the Growth Management family is $640, and average home value is about $185,000. The Containment and Containment Lite families had still lower rents ($554 and $580, respectively) and house values (about $170,000 and and $160,000), on average. The High Density family also has very high housing prices because of New York City. Salt Lake City has more modest, but still higher than national average, housing costs.

The Exclusionary places also tend to have higher prices than the national average. Boston's Exclusion with Restriction leads, with average rent of $677 and housing value of nearly $250,000 in 2000. Basic Exclusion and Extreme Exclusion have somewhat lower average rents of $598 and $618, respectively, and housing values in the $170,000 to $180,000 range. In Middle America a large share of the rental housing stock is old; new development at the urban fringe has left large amounts of housing vacant in many central cities. Contract rents in these regions, consequently, are the lowest of any regulatory family on average ($522).[59] Average house values are also very low at around $145,000.

The less regulated environments of Dallas-San Antonio and Houston have the lowest average house values of the metropolitan areas we examined at $115,000 and $125,000, respectively. But their rents, at about $550, are higher than the average contract rent of just $520 among the Middle America metropolitan areas. The Austin metropolitan area was much closer to the other two areas in Texas in 1990, but the fast growth of well paid technology employment raised Austin's average rent to $663 and its average house value to almost $165,000.

IV. Pulling it all Together: A Summary of the Impacts of Regulation

Local zoning and comprehensive plans are the default land use regulations in the United States. The Middle America and Exclusionary families are still dominated by local governments that rely primarily, or even exclusively, on these tools and very little on growth management measures. Metropolitan areas in these families have a series of regional problems not associated with most reform families. They are less dense. They have less opportunity for low income residents and minority households to live in suburbs. They offer less opportunity for people to own homes in central cities, and have central cities that appeal less to college graduates. The Exclusionary metropolitan areas also have fairly high housing prices. The end result is that these places fail on multiple indicators. To the extent that their regulatory environments are in part responsible for those failures, wholesale regulatory reform is probably called for.

Metropolitan areas in the Middle America family suffer from many of the same problems of sprawl and segregation that the Exclusionary families do. In their favor are lower average housing prices. It is likely, however, that for low income households, blacks, and Hispanics, these low housing prices buy lower quality living environments and public services. We need to know more about the precise dynamic that supports a combination of low housing prices, rapid sprawl, a high concentration of disadvantaged people in central cities, and weak home ownership attainment for central city residents compared with their suburban counterparts. To the extent that regulatory reform can reduce the worst of the problems without raising housing costs to unsustainable levels, such reform is probably called for.

Wild Wild Texas presents the closest thing the United States has to land use deregulation.[60] How does this deregulation play out? With the exception of booming high-tech Austin, it has lower home prices than most other Sunbelt areas. Texas' large metropolitan areas also have lower concentration of poverty and minority residents, and higher home ownership and college graduation concentrations in central cities than the exclusionary families. Finally, density did not drop much in the Texas metropolitan areas in the 1980s and 1990s, and in Austin density increased. But Houston, Dallas, Austin, and San Antonio started out as some of the least dense large metropolitan areas in the United States, and maintaining that level of density should hardly be treated as a badge of honor. Continued low density development in Texas, especially in fringe and unincorporated areas with little or no regulation to mitigate environmental impacts, is bound to produce environmental, economic, and social costs that will mount with the decades. This is especially true to the extent that rural development occurs in flood and hurricane prone areas. Internalizing some of these costs would undoubtedly mean higher housing prices, a trade-off that the Texas Legislature has been generally slow to accept in the past.

The Reform families offer almost the polar opposite of either the Traditional or the Wild Wild Texas regulatory families. Generally, they are denser both as a current picture and over time, and they offer more regional opportunity for low-income residents, blacks, and Hispanics than the other families. These good outcomes come at the cost of higher average housing costs. But housing costs are much higher when reform turns growth *management* into growth *control*, choking off development inside urban growth boundaries as well as beyond them. In the other Reform families, especially Containment and Containment Lite, rents and housing values are substantially lower than in the Exclusionary metropolitan areas. To the extent that regulatory reform should be pursued in the Reform families, it can build upon strong comprehensive planning and permissive zoning to pursue more thorough land supply monitoring and incentives for local governments to designate much more land for housing development at medium and high densities.

These summary observations must be treated as syntheses of correlations, not as direct statements of cause and effect. More research is needed to learn about the mutually supportive relationships among regulation, housing prices, sprawl, and regional opportunity.

It is clear, however, that state policies set the framework for the regulatory regimes that exist on the metropolitan and sub-metropolitan level. The reason the Texas metropolitan areas resemble each other is due, in part, to the unique traditions, history and growth trends in that state—but they are also profoundly impacted by the fact that counties are not given independent planning and zoning authority. By the same token, all the Florida metropolitan areas we examined are in the Growth Management category because Florida is one of a handful of states with a strong state program. Municipalities in Virginia, by contrast, complain bitterly about the dearth of state attention to growth issues and the lack of discretionary authority afforded to them by the state to manage growth beyond traditional mechanisms.

In the end, the important role of the states in setting the regulatory regimes identified here cannot be overemphasized.

V. Conclusion

Driven by concern about sprawl, traffic, open space, infrastructure capacity and costs; state and local governments throughout the U.S. are in the throes of a long term process of reform in their land use policies. In none of these states and local governments is the discussion a choice between regulation and no regulation. Rather, they are choosing either more or different regulation.

As a practical matter, then, the contestable argument that total deregulation will produce better results across a wide array of indicators is not really worth addressing. The real focus of any analysis going forward should be the alternatives between better and worse systems of land use regulation.

Appendix. Results of Factor Analysis, by metropolitan area (or part) and rank.

Metropolitan			Zoning			Contain-	Infrastructure		Growth Control		Affordable
area or part	Region	Family	Exclusion	No Zoning	Planning	ment	Impact Fee	APFO	Moratoria	Permit Cap	Housing
Atlanta	S	Middle America	0.35 (28)	-0.35 (45)	0.49 (42)	-0.99 (65)	-0.75 (52)	-0.11 (45)	0.29 (43)	-0.39 (59)	-0.78 (57)
Austin	S	Austin	-0.57(52)	2.21(3)	-1.82 (71)	-0.66 (49)	0.69 (19)	-1.43 (69)	0.39 (35)	-0.35 (56)	0.93 (13)
Boston (MA)	NE	Exclusion with Restriction	1.19 (8)	-0.68 (64)	-1.08 (65)	-0.79 (56)	-1.09 (68)	0.00 (39)	-0.73 (66)	3.17 (2)	0.74 (17)
Boston (NH)	NE	Extreme Exclusion	2.12 (3)	-1.08 (70)	0.67 (1)	-0.40 (37)	-0.07 (32)	-0.37 (52)	-0.51 (61)	3.01 (3)	-0.48 (46)
Buffalo	NE	Middle America	0.65 (18)	-0.51(53)	-0.32 (50)	-0.99 (64)	-0.53 (47)	0.08 (32)	0.35 (41)	0.35 (14)	-0.32 (38)
Charlotte (NC)	S	Middle America	-0.55 (51)	-0.3 (42)	0.16 (44)	-0.29 (34)	-0.62 (49)	0.76 (11)	0.07 (56)	-0.02 (20)	0.42 (21)
Charlotte (SC)	S	*	-0.41 (41)	0.49 (12)	0.67 (1)	-1.05 (66)	0.46 (25)	-2.67 (72)	0.58 (1)	-0.27 (29)	-1.25 (69)
Chicago (IL)	MW	Middle America	0.42 (25)	0.86 (9)	-1.26 (66)	-0.60 (45)	0.05 (29)	-0.97 (65)	0.55 (17)	-0.19 (24)	-0.47 (44)
Chicago (IN)	MW	Middle America	0.38 (26)	-0.34 (44)	0.67 (1)	0.07 (28)	-1.08 (66)	-0.02 (40)	0.50 (21)	-0.05 (21)	-0.47 (45)
Chicago (WI)	MW	Middle America	0.38 (27)	-0.17 (31)	-0.18 (45)	0.47 (22)	-0.31 (38)	-1.36 (68)	0.37 (37)	0.12 (18)	-1.02 (61)
Cincinnati (IN)	MW	*	0.55 (20)	-0.24 (35)	0.67 (1)	-0.89 (62)	-1.09 (67)	0.03 (38)	0.27 (45)	0.61 (11)	-1.18 (67)
Cincinnati (KY)	S	Middle America	-0.41 (45)	0.27 (17)	0.67 (1)	0.69 (17)	-0.29 (37)	2.49 (2)	0.58 (1)	-0.27 (29)	-0.56 (51)
Cincinnati (OH)	MW	Middle America	0.87 (12)	0.70 (10)	-0.64 (59)	-0.46 (40)	-1.02 (60)	0.31 (22)	0.18 (48)	-0.44 (61)	-0.69 (53)
Cleveland	MW	Middle America	0.78 (14)	0.86 (8)	-0.60 (57)	-0.74 (50)	-0.79 (55)	0.07 (33)	0.19 (47)	-0.29 (43)	-0.41 (42)
Columbus	MW	Middle America	0.90 (11)	0.60 (11)	-0.95 (62)	-0.78 (54)	-0.98 (59)	0.27 (24)	-0.50 (60)	-0.72 (69)	-0.31 (37)
Dallas	S	Dallas-San Antonio	-0.42 (46)	1.57 (6)	0.53 (39)	-0.62 (46)	1.04 (14)	-0.49 (55)	0.36 (39)	-0.37 (58)	-0.13 (33)
Denver	W	Growth Control	-1.10 (66)	-0.37 (46)	0.67 (1)	2.01 (5)	0.72 (18)	-0.65 (57)	-1.33 (68)	3.96 (1)	0.27 (27)
Detroit	MW	Middle America	0.49 (23)	-0.13 (28)	0.54 (38)	-0.41 (38)	-1.03 (61)	0.16 (30)	0.47 (25)	-0.31 (47)	-0.73 (55)
Grand Rapids	MW	Middle America	0.76 (15)	-0.10 (27)	0.49 (41)	-0.53 (42)	-1.05 (62)	0.10 (31)	0.39 (34)	-0.35 (55)	-1.04 (62)
Greensboro	S	Middle America	-0.40 (40)	-0.21 (33)	-0.23 (48)	0.10 (27)	-0.79 (54)	0.64 (13)	0.51 (19)	-0.24 (26)	0.09 (31)
Hartford	NE	Middle America	1.51 (5)	-0.58 (58)	0.65 (34)	-0.80 (58)	-1.07 (65)	0.39 (19)	0.14 (49)	-0.46 (62)	-0.34 (39)
Houston	S	Houston	0.72 (17)	4.71 (1)	-2.55 (72)	-1.05 (66)	0.61 (21)	0.26 (26)	0.58 (1)	-0.27 (29)	0.42 (22)
Indianapolis	MW	Middle America	-0.17 (35)	-0.27 (36)	0.67 (1)	-0.94 (63)	-1.10 (69)	0.04 (36)	0.21 (46)	0.72 (10)	-0.66 (52)
Jacksonville	S	Growth Management	-1.00 (63)	-0.30 (39)	0.67 (1)	-0.04 (31)	1.64 (6)	2.75 (1)	-0.13 (58)	-0.57 (67)	1.56 (6)
Kansas City (KS)	MW	Middle America	-0.50 (49)	-0.68 (65)	0.67 (1)	-0.75 (51)	-0.03 (30)	-0.66 (58)	0.58 (1)	-0.27 (29)	-1.13 (64)
Kansas City (MO)	MW	Middle America	0.02 (33)	0.02 (24)	-0.21 (47)	-0.63 (47)	0.20 (27)	0.78 (10)	0.41 (31)	-0.07 (22)	-1.19 (68)
Las Vegas (AZ)	W	Containment	-0.69 (54)	0.14 (21)	0.67 (1)	1.29 (9)	0.60 (22)	2.19 (3)	0.58 (1)	-0.27 (29)	-1.25 (69)
Las Vegas (NV)	W	Containment-Lite	-0.94 (61)	-0.18 (32)	0.67 (1)	0.80 (14)	0.12 (28)	-0.11 (44)	-0.54 (62)	1.62 (6)	-0.35 (40)
Los Angeles	W	Growth Management	-0.93 (60)	-0.30 (40)	0.60 (37)	-0.27 (33)	0.77 (16)	-0.70 (59)	0.13 (50)	0.79 (9)	1.97 (4)
Louisville (IN)	MW	Middle America	0.52 (22)	-0.23 (34)	0.67 (1)	-0.65 (48)	-1.06 (63)	-0.04 (41)	0.42 (28)	0.17 (16)	-1.15 (66)
Louisville (KY)	S	Middle America	-0.29 (38)	-0.16 (29)	0.67 (1)	0.21 (26)	-0.49 (45)	2.14 (4)	0.58 (1)	-0.27 (29)	-0.53 (48)
Memphis (AR)	S	*	-0.41 (41)	0.49 (12)	-5.18 (73)	-1.05 (66)	-1.34 (71)	0.45 (16)	0.58 (1)	-0.27 (29)	-1.25 (69)
Memphis (MS)	S	*	-0.41 (41)	0.49 (12)	0.67 (1)	-1.05 (66)	-1.34 (71)	0.45 (16)	0.58 (1)	-0.27 (29)	0.79 (16)
Memphis (TN)	S	Containment	-0.17 (36)	-0.43 (51)	-0.35 (51)	1.50 (7)	-0.27 (36)	0.20 (27)	-0.30 (59)	-0.65 (68)	-0.30 (36)
Miami	S	Growth Management	-1.17 (69)	-0.70 (67)	0.67 (1)	0.50 (21)	2.21 (2)	1.20 (7)	0.27 (44)	-0.40 (60)	1.44 (10)
Milwaukee	MW	Middle America	0.74 (16)	-0.31 (41)	-1.39 (68)	-0.47 (41)	-0.32 (39)	-0.59 (56)	-0.64 (64)	1.16 (7)	-0.75 (56)
Minneapolis (MN)	MW	Middle America	0.47 (24)	0.10 (22)	-0.25 (49)	0.51 (20)	0.52 (23)	0.48 (15)	-0.10 (57)	-0.34 (50)	-0.28 (35)
Minneapolis (WI)	MW	Basic Exclusion	2.29 (2)	-0.65 (63)	-0.57 (56)	0.03 (30)	-0.50 (46)	-0.78 (63)	0.10 (54)	0.47 (12)	-0.97 (60)
Nashville	S	Containment	0.17 (32)	-0.61 (61)	-0.35 (52)	2.32 (4)	-0.04 (31)	-0.21 (48)	0.48 (23)	-0.31 (46)	-0.41 (41)

Appendix. Results of Factor Analysis, by metropolitan area (or part) and rank. (continued)

Metropolitan area or part	Region	Family	Zoning: Exclusion	Zoning: No Zoning	Zoning: Planning	Contain-ment	Infrastructure: Impact Fee	Infrastructure: APFO	Growth Control: Moratoria	Growth Control: Permit Cap	Affordable Housing
New Haven	NE	Middle America	0.53 (21)	-0.57 (56)	0.51 (40)	-0.57 (44)	-1.07 (64)	0.06 (34)	0.42 (29)	-0.34 (51)	0.26 (28)
New Orleans	S	Containment-Lite	-0.54 (50)	-0.27 (37)	-1.38 (67)	1.33 (8)	0.68 (20)	1.89 (5)	-2.98 (72)	0.87 (8)	-0.42 (43)
New York (NJ)	NE	Basic Exclusion	1.44 (7)	-0.59 (59)	0.67 (1)	-0.84 (59)	-0.49 (44)	-0.06 (42)	0.43 (27)	-0.33 (49)	0.86 (15)
New York (NY)	NE	High Density	0.23 (30)	-0.61 (60)	-1.40 (69)	-0.77 (53)	-0.65 (50)	-0.71 (60)	-0.75 (67)	-0.84 (70)	0.47 (20)
New York (PA)	NE	*	1.48 (6)	0.26 (18)	-0.20 (46)	-1.05 (66)	-0.88 (58)	-0.35 (51)	0.58 (1)	-0.27 (29)	-1.15 (65)
Norfolk (NC)	S	*	3.52 (1)	-1.65 (73)	0.67 (1)	-1.05 (66)	1.52 (8)	-0.77 (62)	-5.45 (73)	-2.90 (73)	-1.25 (69)
Norfolk (VA)	S	Middle America	-0.87 (58)	-0.17 (30)	0.67 (1)	1.25 (10)	-1.23 (70)	0.28 (23)	0.11 (52)	-0.47 (63)	0.22 (29)
Oklahoma City	S	Middle America	-0.44 (48)	0.38 (16)	-0.38 (54)	-0.44 (39)	-0.39 (42)	0.34 (20)	0.58 (1)	-0.27 (29)	0.17 (30)
Orlando	S	Growth Management	-0.76 (56)	-0.41 (49)	0.67 (1)	0.07 (29)	2.42 (1)	1.09 (8)	0.40 (33)	-0.35 (54)	0.87 (14)
Philadelphia (DE)	S	*	-0.43 (47)	2.19 (4)	-1.04 (63)	1.21 (12)	-0.27 (34)	-1.52 (70)	0.58 (1)	-0.27 (29)	1.47 (9)
Philadelphia (MD)	S	*	-0.67 (53)	0.16 (20)	0.67 (1)	1.80 (6)	-0.75 (53)	0.98 (9)	0.11 (51)	-0.48 (64)	-0.55 (50)
Philadelphia (PA)	NE	Middle America	0.61 (19)	-0.10 (26)	-0.86 (61)	-0.32 (36)	-0.33 (40)	0.19 (28)	0.52 (18)	-0.19 (23)	-0.54 (49)
Philadelphia (NJ)	NE	Basic Exclusion	1.96 (4)	-0.86 (69)	0.67 (1)	-0.84 (60)	-0.38 (41)	-0.13 (47)	0.41 (30)	-0.34 (52)	0.41 (23)
Phoenix	W	Growth Management	-1.15 (67)	-0.56 (55)	0.67 (1)	0.62 (19)	1.71 (5)	-0.28 (49)	0.58 (1)	-0.27 (29)	1.08 (12)
Pittsburgh	NE	Middle America	0.92 (10)	0.17 (19)	-0.64 (58)	-0.76 (52)	-0.70 (51)	-0.07 (43)	0.56 (16)	-0.25 (28)	-0.89 (59)
Portland (OR)	W	Containment	-0.78 (57)	-0.70 (66)	0.67 (1)	2.44 (3)	1.46 (10)	0.05 (35)	0.30 (42)	0.39 (13)	0.32 (24)
Portland (WA)	W	*	-1.34 (71)	-0.78 (68)	0.67 (1)	2.61 (1)	1.14 (12)	-0.73 (61)	-2.61 (71)	-1.63 (72)	-0.21 (34)
Raleigh	S	Middle America	-0.12 (34)	-0.30 (38)	-0.40 (55)	0.37 (25)	-0.27 (35)	0.27 (25)	0.35 (40)	-0.20 (25)	0.30 (25)
Richmond	S	Middle America	0.18 (31)	-0.03 (25)	0.67 (1)	-0.14 (32)	-0.84 (56)	-0.38 (54)	0.45 (26)	-0.32 (48)	-0.51 (47)
Rochester	NE	Middle America	0.81 (13)	-0.43 (50)	-0.35 (53)	-0.80 (57)	-0.41 (43)	0.19 (29)	0.36 (38)	0.18 (15)	-0.73 (54)
Sacramento	W	Growth Management	-0.99 (62)	-0.38 (48)	0.67 (1)	0.44 (23)	1.15 (11)	-1.05 (66)	-0.68 (65)	0.15 (17)	1.58 (5)
Salt Lake City	W	High Density	-1.28 (70)	-0.61 (62)	-1.42 (70)	-0.31 (35)	0.47 (24)	-2.31 (71)	0.10 (55)	-0.48 (65)	0.27 (26)
San Antonio	S	Dallas-San Antonio	-0.69 (55)	1.69 (5)	0.66 (33)	-0.78 (55)	0.99 (15)	-0.93 (64)	0.38 (36)	-0.36 (57)	1.18 (11)
San Diego	W	Growth Management	-1.64 (72)	-1.09 (71)	0.65 (35)	1.08 (13)	1.62 (7)	-0.12 (46)	-2.51 (70)	-1.00 (71)	2.48 (2)
San Francisco	W	Growth Control	-1.10 (65)	-0.48 (52)	0.62 (36)	0.77 (15)	1.07 (13)	-1.19 (67)	-0.64 (63)	2.86 (4)	2.06 (3)
Seattle	W	Containment	-1.16 (68)	-0.54 (54)	0.67 (1)	2.52 (2)	1.47 (9)	0.03 (37)	0.10 (53)	-0.49 (66)	0.66 (19)
St. Louis (IL)	MW	Middle America	1.13 (9)	1.50 (7)	-1.06 (64)	-0.55 (43)	-0.57 (48)	-0.32 (50)	0.57 (15)	-0.25 (27)	-0.85 (58)
St. Louis (MO)	MW	Middle America	0.26 (29)	0.46 (15)	-0.75 (60)	-0.85 (61)	-0.25 (33)	0.49 (14)	0.48 (24)	-0.01 (19)	-1.13 (63)
Tampa	S	Growth Management	-1.01 (64)	-0.38 (47)	0.67 (1)	0.77 (16)	1.95 (4)	0.32 (21)	0.49 (22)	-0.31 (45)	1.47 (8)
Washington (DC)	S	*	-2.01 (73)	-1.54 (72)	0.67 (1)	-1.05 (66)	0.46 (25)	-2.67 (72)	0.58 (1)	-0.27 (29)	3.00 (1)
Washington (MD)	S	Containment-Lite	-0.92 (59)	-0.57 (57)	0.43 (43)	1.22 (11)	0.77 (17)	1.56 (6)	-2.16 (69)	1.85 (5)	-0.05 (32)
Washington (VA)	S	Middle America	-0.30 (39)	-0.34 (43)	0.67 (1)	0.67 (18)	-0.85 (57)	-0.38 (53)	0.50 (20)	-0.30 (44)	0.73 (18)
Washington (WV)	S	*	-0.19 (37)	3.47 (2)	0.67 (1)	-1.05 (66)	-1.34 (71)	0.45 (16)	0.58 (1)	-0.27 (29)	-1.25 (69)
West Palm Beach	S	Growth Management	-0.41 (44)	0.06 (23)	0.67 (1)	0.42 (24)	2.21 (3)	0.73 (12)	0.40 (32)	-0.34 (53)	1.48 (7)

** Note: these sub-parts of metropolitan areas were not included in the cluster analysis because they contained too few local governments, or too few responded to our survey.*
The numbers in the table are "factor scores." The scores are based on standard deviations; 95 percent of the variation in the factor score lies between -2 and +2, and 67 percent between -1 and +1. Factor scores with values of less than -2 or greater than 2, therefore, are very extreme values in the national context, and those with absolute values greater than 1 are very low or very high. Labeling of the factors (e.g., "Exclusion," "No Zoning," High Density") is based on the authors' appraisal of which of the background variables associate with high or low values for the factor. For example, for the "Permit Cap" factor, Denver's score of 3.96 is considered extremely high, San Diego's score of -1.00 is very low, and St. Louis' (MO) -0.01 is a close representation of the national context.

Endnotes

1. Rolf Pendall is an associate professor in the Department of City and Regional Planning at Cornell University and a senior researcher associate at Solimar Research Group. Robert Puentes is a fellow with the Brookings Institution's Metropolitan Policy Program. Jonathan Martin is a Ph.D. candidate in the Department of City and Regional Planning at Cornell University.

2. Anthony Downs, *New Visions for Metropolitan America* (Brookings Institution Press and Lincoln Institute of Land Policy, 1994), p. 13–14.

3. Buchanan v. Warley, 245 U.S. 60 (1917) was the U.S. Supreme Court decision that ruled Kentucky could not require residential segregation. A racial zoning ordinance in Birmingham was struck down by federal courts as recently as 1949. See Monk et al. v. City of Birmingham et. al, 87 F. Supp. 538 (1949), upheld on appeal in City of Birmingham et al. v. Monk et al., 185 F.2d 859 (1950). See Christopher Silver, "The Racial Origins of Zoning: Southern Cities from 1910–1940," *Planning Perspectives: An International Journal of History,* 6 (1991): 189–205.

4. Rolf Pendall, "Local Land-Use Regulation and the Chain of Exclusion." *Journal of the American Planning Association* 66(2) (2000): 125–142.

5. The landmark case Village of Euclid, Ohio v. Ambler Realty Co., 272 U.S. 365 (1926) upheld local zoning and gave the seal of approval to comprehensive zoning.

6. See: Eric Damian Kelly and Barbara Becker, *Community Planning: An Introduction to the Comprehensive Plan* (Washington: Island Press, 2000).

7. For a discussion of Maryland's program as well as the other states discussed here, see: John M. DeGrove, *Planning Policy and Politics: Smart Growth and the States* (Cambridge: Lincoln Institute of Land Policy, 2005).

8. Arthur C. Nelson and others, "The Link Between Growth Management and Housing Affordability: The Academic Evidence." (Washington: Brookings, 2002). Available at **http://www.brookings.edu/es/urban/publications/growthmanagexsum.htm**.

9. But note that standard Euclidian zoning also profoundly impacted the pace, location, and extent of development—even though it was not expressly intended.

10. S. Mark White and Elisa L. Paster, "Creating Effective Land Use Regulations through Concurrency." *Natural Resources Journal* 43 (3) (2003): 753–779.

11. Boca Raton, unlike Petaluma, also imposed an ultimate population cap that was subsequently struck down in court. See David R. Godschalk, and others, *Constitutional Issues of Growth Management* (Washington: Planners Press, 1979).

12. See Madelyn Glickfeld and Ned Levine, "Regional Growth . . . Local Reaction: The Enactment and Effects of Local Growth Control Measures in California" (Cambridge: Lincoln Institute of Land Policy, 1992).

13. Rolf Pendall, William Fulton, and Jonathan Martin, "Holding the Line: Urban Containment in the United States (Washington: Brookings, 2002). Available: **http://www.brookings.edu/es/urban/publications/pendallfultoncontainmentexsum.htm**.

14. A more critical observer may argue that these affordability devices are a thin veneer of inclusion atop a foundation of exclusion. A device such as density bonus, for example, is only applicable when density is being restricted in the first place.

15. In 2002–2003, this amounted to over $1 billion in new funds, with total fund equity of over $2.2 billion owing to lags in expenditures. See: California Department of Housing and Community Development, "Redevelopment Housing Activities, Fiscal Year 2002–2003" (Sacramento: 2004). Available at **http://www.hcd.ca.gov/hpd/rda/02-03/rdasum02-03.pdf**.

16. This section briefly points to some of the key conclusions of research on the effects of planning and regulation. More complete recent reviews can be found in: John I. Carruthers, "Evaluating the Effectiveness of Regulatory Growth Management Programs: An Analytic Framework," *Journal of Planning Education and Research* 21 (4) (2002): 391–405; Keith R. Ihlanfeldt, "Exclusionary Land Use Regulations Within Suburban Communities: A Review of the Evidence and Policy Prescriptions," *Urban Studies* 41 (2) (2004): 261–283; Arthur C. Nelson, and others, "Urban Containment and Residential Segregation: A Preliminary Investigation," *Urban Studies* 41 (2) (2004): 423–439; Rolf Pendall and others, "Connecting Smart Growth, Housing Affordability, and Racial Equity." In X. Briggs, ed. *The Geography of Opportunity: Race and Housing Choice in Metropolitan America,* (Washington: Brookings Institution Press, 2005); John Quigley and Larry Rosenthal, "The Effects of Land Use Regulation on the Price of Housing:

What Do We Know? What Can We Learn?" *Cityscape: A Journal of Policy Development and Research* 8 (1) (2005): 69–138; and Michael Schill. "Regulations and Housing Development: What We Know." *Cityscape: A Journal of Policy Development and Research* 8 (1) (2005): 5–20.

17. See: Michael Pogodzinski and Tim Sass, "Measuring the Effects of Municipal Zoning Regulations: A Survey." *Urban Studies* 28 (4) (1991): 597–621; John D. Landis, "Do Growth Controls Work? A New Assessment." *Journal of the American Planning Association* 58, no 4 (1992): 489–508; Kee Warner and Harvey Molotch. *Building Rules: How Local Controls Shape Community Environments and Economies* (New York: Westview Press, 2001); and Ihlanfeldt (2004).

18. Eran Feitelson, "The Spatial Effects of Land Use Regulations: A Missing Link in Growth Control Evaluations," *Journal of the American Planning Association* 59 (4) (1993): 461–72; Rolf Pendall, "Do Land Use Controls Cause Sprawl?" *Environment and Planning B: Planning and Design* 26 (1999): 555–571; and Qing Shen, "Spatial Impacts of Locally Enacted Growth Controls: The San Francisco Bay Area in the 1980s," *Environment and Planning B: Planning and Design* 23 (1996): 61–91.

19. Pendall (1999)

20. Jerry Anthony, "Do State Growth Management Regulations Reduce Sprawl?" *Urban Affairs Review* 39 (3) (2004): 376–397.

21. Ihlanfeldt (2004) and Nelson and others (2004).

22. Ihlanfeldt (2004).

23. Arthur C. Nelson and James B. Duncan. *Growth Management Principles and Practices.* (Chicago: American Planning Association, 1995); Rolf Pendall and John I. Carruthers. "Does Density Exacerbate Income Segregation? Evidence from United States Metropolitan Areas, 1980–2000." *Housing Policy Debate* 13(4) (2003): 541–590; and Nelson and others (2004).

24. Pendall (2000).

25. The most notable jurisdictions that were excluded at this screen were Texas counties, which generally are restricted from imposing land use regulations beyond a bare minimum of subdivision regulation.

26. A copy of the survey instrument can be found on the Brookings Institution's website. Available: **http://www.brookings.edu/metro**.

27. An error early in the survey development process led us to omit the adequate public facilities ordinance (APFO) question from the instrument. We used an e-mail survey for a follow-up to obtain additional responses. Hence the results on APFOs must be treated as subject to more error than those on other systems.

28. Cases were excluded when they would have been based on responses from only one jurisdiction from the sub-metropolitan area (e.g., Clark County, WA in the Portland, OR metropolitan area).

29. Factor analysis is a statistical tool employed to reduce or summarize a large data set by determining the interrelationships (or key "factors") between the variables.

30. Cluster analysis is used to group the areas into homogeneous "clusters" on the basis of their similarity across a set of variables. As in this case, cluster analysis is often used as a step after factor analysis.

31. The statistics produced during the hierarchical clustering process indicate how big a change each step represents from the previous cluster solution; for instance, the process can proceed for several steps with changes of less than 5 percent in the "distance coefficient" and then have a 15 percent change in the coefficient, signaling a major shift. The appropriate cluster solution would be just before that major shift.

32. Eleven other sub-regions were not included in the cluster analysis because of the low number of local jurisdictions for which we had adequate responses. This includes mostly small areas such as the Pennsylvania part of the New York metropolitan area, or the North Carolina portion of the Virginia Beach-Norfolk area. Unfortunately, it also includes Washington, D.C.

33. Stephen Jay Gould, *Wonderful Life: The Burgess Shale and the Nature of History* (New York: Norton, 1990), p. 98.

34. The companion report is available: **http://www.brookings.edu/metro**.

35. It is important to recognize that a special permit or special exception is just that and the fact that the option exists does not mean the building would necessarily be sanctioned

36. This counts both counties and townships; in many Midwestern states, counties can "back up" townships, so that even when a township lacks a zoning ordinance, the land within the township may be covered by the county's zoning ordinance. Hence the share of land area and population

that are covered by zoning are higher in the Midwest than the share of jurisdictions.

37. It is important to note that although a place like Houston may not have zoning, it does regulate land use in a variety of ways including minimum lot sizes, deed restrictions, parking requirements, and other directives that have a profound impact on land use patterns. See Michael Lewyn, "How Overregulation Creates Sprawl (Even in a City without Zoning), *Wayne Law Review* (50) (1191) (2005).

38. This "blueprint" includes an advisory urban growth boundary that many counties have been adopting as their official policies.

39. Arthur C. Nelson and Mitch Moody, "Paying for Prosperity: Impact Fees and Job Growth" (Washington: Brookings, 2003). Available at **http://www.brookings.edu/metro/publications/nelsonimpactfees.htm**.

40. See e.g., Stephen Malpezzi, "Housing Prices, Externalities, and Regulation in U.S. Metropolitan Areas," *Journal of Housing Research* 7 (2) (1996), 209-41.

41. Nico Calavita, Kenneth Grimes, Alan Mallach, "Inclusionary Housing in California and New Jersey: A Comparative Analysis." *Housing Policy Debate,* 8 (1) (1997) 89–110.

42. Charles C. Euchner and Elizabeth G. Frieze, "Getting Home: Overcoming Barriers to Housing in Greater Boston" (Boston: Pioneer Institute for Public Policy Research, 2003.)

43. The results discussed here are based largely on responses from cities. Counties were not surveyed because they do not regulate land use. Information on the presence or absence of zoning, however, does include the population and land area in the counties, which can be quite large.

44. The respondent from the city of Austin indicated that it does not have a plan. As a result, only 29 percent of the population of the metropolitan area and 46 percent of the land area is covered by a comprehensive plan, according to the survey results; follow-up research, however, indicates that Austin has had a comprehensive plan since 1979. This increases the resemblance between the regulatory structure of Austin and Dallas-Fort Worth.

45. The US Department of Agriculture's Natural Resources Conservation Service produces data on land use in the National Resources Inventory every five years. The production of county-level data from the 2002 NRI is behind schedule as of this writing, making it impossible to produce metropolitan level estimates of density after 1997.

46. William Fulton and others, "Who Sprawls Most? How Growth Patterns Differ Across the U.S." (Washington: Brookings, 2001). Avalable at **http://www.brookings.edu/es/urban/fulton-pendall.htm**.

47. If the 12 families are grouped into the four larger groups—Traditional, Exclusion, Wild Wild Texas, and and Reform—the contrasts in density become clearer. The Middle America group, with 32 cases, had a density in 1997 of 3.77 persons per urban acre. (A statistically significant difference at the 95 percent confidence level based on Tamhane's T2 test.) The Reform family, with 19 cases, had a density of 5.19 persons per urban acre. None of the other families associated with statistically significant differences from one another in a five-way ANOVA test.

48. Pendall, Fulton, and Martin (2002).

49. Pendall, Fulton and Martin (2002).

50. Edward H. Hill, John F. Brennan, and Harold L. Wolman, "What is a Central City in the United States? Applying a Statistical Technique for Developing Taxonomies." *Urban Studies* 35 (11) (1998): 1935–1969.

51. This is indeed the contention of Nelson et al. in their review of the relationship between urban containment policy and the health of central cities. See Arthur C. Nelson and others, "Urban Containment and Central City Revitalization," *Journal of the American Planning Association* 70 (4) (2004): 411–425.

52. We cannot demonstrate and do not argue here that these orders and families produce opportunity or distress, though such questions will be tested in future research.

53. The Wild Wild Texas and Reform families had statistically significantly less poverty concentrations than the Middle America family using Tamhane's T2 test at better than the 95 percent confidence level. Overall, the ANOVA test identified significant differences in poverty concentration among the five family groups at p=0.001.

54. Black residents are non-Hispanic blacks in these calculations; they are mainly African American, but they may also be African or Afro-Caribbean. Data are not entirely comparable between 1990 and 2000 because respondents had the option of selecting multiple races in 2000. Year-2000 data are based on the share of residents who identified themselves only as black (no other races).

55. The Middle America family had statistically significantly higher black concentrations than the High Density family and the Reform and Wild Wild Texas orders using

Tamhane's T2 test at better than the 95 percent confidence level. Overall, the ANOVA test identified significant differences in African American concentration among the five family groups at p=0.011.

56. The reform families had statistically significantly lower concentrations of Hispanics than either the Middle America or the High Density family using Tamhane's T2 test at better than the 95 percent confidence level. Overall, the ANOVA test identified significant differences in Hispanic concentration among the five family groups at p<0.001.

57. Presumably, college graduates in either of these two large metropolitan areas who wish to live in a central city would be more inclined to live in either New York City or Philadelphia than in Camden, Newark, or Trenton.

58. This analysis is based again on data from the 1990 and 2000 U.S. Censuses of Population and Housing. Census data on housing values are unreliable because they are based on self-reporting by respondents who may not be well informed about local housing market conditions. Contract rent data, however, are more reliable.

59. When the families are combined into five major groups, only one statistically significant difference between groups shows up at a 95 percent confidence level. The 32 Middle America cases had contract rent in 2000 that averaged $522, over $100 less than the average of $627 in the reform families.

60. The term "deregulation" may actually not be the best term to apply to many parts of Texas which never had land use regulation to begin with.

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