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Policy Study No. 287

Smart Growth and Housing Affordability:
Evidence from Statewide Planning Laws

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Executive Summary

State legislatures across the nation are considering statewide planning reforms to grapple with population and urban growth on the metropolitan fringe. Many of these efforts are driven by theoretical concepts of urban planning and practice, and lack a rigorous assessment of their possible impacts and unintended consequences. Nevertheless, the impacts on the quality of life for households and families can be significant, and sometimes they can have unintended negative side effects. This is probably most evident in the case of housing availability and affordability.

Most "Smart Growth" planning reforms adopt as a core principle the goal of increasing housing affordability and diversity. This goal, in fact, is one of the leading justifications for limiting so-called "urban sprawl." Low-density residential and commercial development, the argument goes, reduces the overall quality of urban life by increasing congestion, promoting social isolation and segregation, and inefficiently using land. More compact higher density land-use patterns, sprawl opponents continue, would improve the quality of life for most people and produce a richer range of housing choices at affordable prices. Centralized land-use planning at the state, regional, and local levels, tied to statewide planning goals, is often promoted as the solution. More than a dozen states have adopted statewide growth-management legislation using this general framework, including states as diverse as Florida, Oregon, Washington, Maine, and Tennessee.

Surprisingly little analysis has examined the real-world impacts of these programs based on their performance despite the potential for significant, negative side effects. Decades of scholarly research has shown growth controls can reduce housing affordability if they increase costs and limit the supply of new units. Yet, with the exception of a few case studies of individual cities and regions, almost no attention has been paid to the practical effects of implementing this new wave of statewide planing reforms; virtually all the attention has centered on designing and passing Smart Growth legislation and implementing the plans. *Smart Growth and Housing Affordability: Evidence from Statewide Planning Laws* begins to fill this void by assessing the effects of statewide planning on the price and affordability of housing in three key states: Florida, Oregon, and Washington.

Planning in Florida, Oregon, and Washington

Florida, Oregon, and Washington are recognized as leaders in the Smart Growth movement and all have given housing goals important prominence in their regional and urban planning. Florida, for example, explicitly requires its cities to plan for a diverse range of housing needs and types. The "housing element" in local plans must include an analysis of current population and income trends, housing-unit costs, vacancy rates, and housing demand. Moreover, planning should accommodate a variety of densities and housing types.

In Florida, the Growth Management Act's (GMA) architects anticipated that the law might have negative impacts on housing affordability. They required local plans to address housing affordability as a specific, defined housing issue in their plans. In 1988, the legislature even adopted a housing goal that Florida will "ensure that decent and affordable housing is available for all its residents" by 2010. Florida planners took their role as enforcers of the state GMA's principles seriously: more than half of the comprehensive plans for Florida's cities, and two-thirds of the plans for its counties, were rejected by the Florida Department of Community Affairs because they failed to comply with an element of the state's growth-management law. Similarly, Washington State's GMA requires cities to plan for a variety of housing types and densities for all income levels. In fact, Washington State's GMA goes so far as to bestow a legal duty on cities and counties to accommodate the growth projected by the state government. Like Florida and Oregon, the primary implementation mechanism is the comprehensive plan.

Establishing housing affordability goals are one thing, achieving them is another. Several features of each state's GMA can potentially, although unintentionally, increase housing prices and, by extension, reduce housing affordability. Urban-growth boundaries (mandated in Washington and Oregon and highly encouraged in Florida), for example, constrain a key component of housing: land. Thus, in an effort to reduce urban sprawl, growth boundaries can constrain supply and put upward pressure on housing prices. If housing quality falls, or incomes fail to keep pace with housing prices, housing affordability will deteriorate. Forward, end-state planning that serves as the basis for regulating land use and urban design may also create substantial regulatory burdens for local governments and the private sector, particularly when they lack key information. Poor forecasting could also lead to the underprovision of land at the appropriate densities, creating supply shortages in important parts of the housing market. Whether housing affordability increases or decreases under statewide growth management is primarily an empirical question.

Housing Affordability in Florida, Oregon, and Washington

An initial examination of trends in Florida, Oregon, and Washington revealed that housing prices in metropolitan areas increased faster than personal income and economic growth during the 1990s, suggesting housing affordability may have also fallen. Metropolitan home prices increased 44 percent faster than median income in Washington, more than twice as fast as income in Oregon, and at about the same rate as income in Florida. These price increases appear, at first glance, to translate directly into reductions in housing affordability. Further analysis found that metropolitan housing affordability:

- Fell by more than 50 percent in Oregon from its peak in 1993;
- Eroded by 7.4 percent in Washington State since 1991;
- Eroded by 8.9 percent in Florida since its peak in 1993; and
- Eroded in all three states after 1993 while affordability improved for the nation throughout the 1990s.

The study extended the analysis to examine housing-price trends and planning under each state's GMA at the county level for Washington State and Florida. Unfortunately, detailed county-level data for Oregon were not available, preventing a similar analysis of housing-price trends in that state. In Washington State, housing prices increased the longer a county planned under the GMA when housing price changes between 1995 and 2000 were analyzed. A simple correlation between the two variables suggested 15.1 percent of the growth in housing prices could be attributed to planning through the GMA, although these results did not control for other factors. While detailed data for rural counties in Florida were unavailable, an analysis of housing-price growth in 20 metropolitan areas revealed a similar relationship.

GMA Impact on Housing Prices and Affordability in Washington

Since other factors may also influence housing-price growth (e.g., rising incomes, rising demand, smaller households, quality, etc.), regression analysis was used to develop a more complete understanding of the GMA's role in housing-price increases in Washington and Florida and their implications for housing affordability. In Washington, after controlling for changes in income, population, density, household size, and geographic proximity to the state's largest metropolitan area (Seattle-Tacoma), the regression results suggested:

- Higher density counties tended to experience faster housing-price appreciation;
- Counties where income grew faster tended to experience higher home-price escalation;
- Counties in the Seattle-Tacoma metropolitan area experienced faster housing price growth than other counties (metropolitan and rural); and
- The longer a county planned under Washington State's GMA, the faster housing prices increased, accounting for 26 percent of the estimated growth in housing prices during this period.

From 1990 to 1995, housing prices increased by 16.9 percent, or 3.4 percent per year. Washington State's GMA may have added about 0.7 percentage points to the housing inflation rate for each year the county had a comprehensive plan in place. Thus, based on the estimates from the statistical analysis, housing prices would have increased 2.7 percent per year without the effects of the GMA. In comparison, income per household increased by 3.8 percent per year during this period. In short, Washington could have made significant gains in affordability, all other factors held constant, in the absence of its growth-management law.

GMA Impacts on Housing Prices and Affordability in Florida

A similar analysis of housing-price changes in Florida's urban counties between 1994 and 2000 controlled for density, household size, and proximity to the Orlando metropolitan area. Household income data were unavailable, yet the results suggested:

- Density was not an important factor in explaining rising home prices in Florida, but the size of the household was;
- Urban counties in the Orlando metropolitan area had significantly lower rates of housing-price increases;
- The number of years a county had been planning in compliance with the Florida GMA significantly increased housing prices, explaining about 20 percent of the growth between 1994 and 2000;
- Counties bringing their plans into compliance with Florida's growth-management law faster had higher housing-price growth between 1994 and 2000 compared to those that delayed compliance.

While the lack of data and limited number of counties and metropolitan areas requires interpreting the results of the analysis carefully, the results can be placed into the larger and more policy-relevant context of housing affordability. The statistical results suggests that Florida's GMA may have contributed to a 15.0 percent decline in affordability between 1994 and 2000. Without Florida's growth-management laws, the rate of decline in housing affordability would have slowed by one-third. On a statewide basis, the GMA's effect could have reversed trends toward less affordable housing.

The results of the statistical analysis confirm conclusions reached by University of Iowa planning professor Jerry Anthony. Anthony conducted one of the most detailed analyses of the impacts of Florida's statewide growth-management regulations on housing to date. Focusing on the period in which the growth-management laws were first implemented between 1980 and 1995, Anthony found Florida's GMA increased housing prices and lowered housing affordability although, unfortunately, he did not calculate magnitudes from his results. The enduring relationship between GMA planning and housing prices in the later half of the 1990s suggests that Anthony's results are still valid even though his analysis stopped in 1995.

Policy Implications

In sum, this study found a disconnection between the goals of statewide growth-management laws that seek to ensure affordable housing for their residents and the effects of these growth-management policies when implemented. GMA compliance has resulted in higher housing prices and decreased housing affordability in both Washington state and Florida, thus making the goal of home ownership less attainable for renters and lower-income households. In Washington, the GMA may contribute to more than one-quarter of the increase in housing prices.

The results also strongly suggest that some of the goals of Smart Growth advocates may be inconsistent with the realities of housing development. To the extent that more compact, higher density urban development is encouraged through growth-management laws designed in ways similar to Florida and Washington, and by extension Oregon, higher housing prices could result. First, higher density urban areas are associated with higher housing prices as more people compete for a more scarce resource: land. Second, by forcing development into existing urban areas, housing development will take place in fast-growing areas, allowing consumers to bid up the price of land. These were important findings from the Washington State analysis.

The results also suggest policymakers should be skeptical of attempts to achieve affordable housing goals without a full appreciation for their impacts on real-estate markets. The American housing market is dynamic, and current comprehensive planning tools may not be able to capture this dynamism or the nuance required to meet their housing and neighborhood preferences. This is particularly true in a legal system that continues to protect property rights and respects the importance of meeting consumer demands for most goods and services, including housing. Strong growth-management laws that tie local planning to statewide goals run the risk of further politicizing the development process, increasing transaction costs, and creating an imbalance between housing supply and demand. This disequilibrium may exist in the aggregate as well as for specific types of housing, putting upward pressure on housing prices and, ultimately, reducing housing affordability.

The study concludes by noting that although housing affordability is an important goal of statewide planning reform, GMAs have the real potential of increasing housing costs and reducing affordability by imposing an onerous development review process on land development, thereby increasing costs and prices. Thus, the effects of implementing statewide growth management laws may run counter to explicit goals to promote housing affordability included in the principles, goals, and objectives of growth-management legislation on the state level.

Part 1

Introduction

Growth management has come to the forefront of public-policy debate at the state and local level. Concerned about the effects of both population and economic growth on their environment, citizens and their elected officials are struggling for ways to identify and mitigate the problems associated with new homes and the demand for shopping malls and office development that inevitably follows. New building growth, which usually occurs on the urban periphery, has laid the political foundation for a growing movement to restrict and further control the pace and pattern of land development. Many growth-management advocates argue that state and local land-use planning should actively shape the built environment for local citizens through zoning and various forms of development control.

"Smart Growth" has emerged as the catch-all phrase for a wide range of growth-management initiatives. Many states are using planning reforms to curb urban sprawl.[1] This is most clearly evident in states that have adopted statewide growth-management laws, such as Florida, Maine, Oregon, Tennessee, Washington, and others. Most planning reforms also call for a significant expansion of government oversight in the land-development process.[2] This oversight often takes one of two not necessarily mutually exclusive forms: direct citizen participation, through grass-roots activism and the use of initiatives and referenda in local land-use policy, or top-down planning using goals and objectives established at the state level and administered bureaucratically. Most of these growth-management initiatives are aimed specifically at more restrictively regulating new development, amplifying the claim of almost a century of zoning to put development in the "right" place at the "right" time.

While city-initiated growth-management efforts are becoming more common, particularly in states such as California, most Smart Growth programs have been implemented through state legislatures. Hawaii and Vermont helped pioneer growth-management efforts at the state level, but Oregon was the first geographically diverse state to implement a state-directed system where the core features could be adapted to other states. After passing its growth-management act (GMA) in 1973, urban-growth boundaries and comprehensive land-use plans were subsequently established in all of Oregon's cities and counties. Portland's regional growth boundary was established in 1979, and all Oregon cities and jurisdictions had growth boundaries in place by 1986. As a result, Oregon has become the nation's model for statewide growth management, with features of its program being applied in Washington State, Maryland, Tennessee, and Florida.

By 2000, at least a dozen states had adopted some form of a statewide growth-management law that incorporated varying degrees of centralized land-use planning. On the local level, these policies have become the focus of intense debate and conflict. Several studies have emerged that purport to evaluate the costs, benefits, and implications of various Smart Growth initiatives. Ironically, most of the debates have focused on case studies of specific cities and regions, even though the growth-management initiatives were the

product of a state-level legislative action. Almost no attention has been devoted in public discussion to the statewide impacts of growth-management laws. This study begins to fill this void by focusing on a core component of almost every statewide growth-management law: the impacts of statewide growth-management laws on housing prices and affordability. This study focuses on the experiences of two states in particular: Florida, which passed its GMA in 1985, and Washington State, which passed its GMA in 1990.[3]

Florida became the first large and demographically diverse state to adopt a statewide growth-management law. In addition to statewide goals and objectives, Florida's growth-management law included "concurrency" provisions for roads, sewers, and other core infrastructure. (Concurrency requires cities, counties, and other jurisdictions to have core infrastructure in place at the time development takes place in order to prevent a deterioration of service levels and quality as a result of growth. Concurrency has emerged as one of the core principles underlying state Smart Growth initiatives.[4])

By 2000, at least a dozen states had adopted some form of a statewide growth-management law that incorporated varying degrees of centralized land-use planning. On the local level, these policies have become the focus of intense debate and conflict.

Washington State passed its growth-management law in 1990. Rather than taking the top-down approach that was a signature feature of the Oregon and Florida models, legislators in Washington adopted a more locally driven strategy. First, the state would forecast population growth for the state overall and allocate the forecasted growth to counties. Counties and cities would then determine how projected growth would be accommodated by adopting comprehensive plans consistent with state goals and implementing the plans through detailed subdivision and zoning regulations. Washington also gave rural counties more flexibility. Rather than mandating growth management for all counties, rural counties could choose not to participate under certain slow-growth conditions.

This study's focus on housing rests on three general observations about the impact of statewide growth-management laws. First, diversifying existing housing and ensuring housing affordability for all income ranges is an important, usually explicit, goal of the programs. Second, housing is the portion of the land-development process that affects the largest number of people and has the most important impact on the pattern and pace of land development. Third, most conflicts over land-use seem to occur over housing, in part because housing development is the primary driver of land-development patterns in communities, and its effects are highly personal and immediate.

Part 2

Housing and "Smart Growth"

Housing may be at the heart of current conflicts over Smart Growth. Programs and initiatives that protect natural resources are routinely supported at the ballot box.[5] Moreover, popular support exists at the state level for maintaining large parcels of land and environmentally sensitive areas such as open space, either as protected wildlife preserves or parks. More than a dozen states have publicly funded programs to purchase development rights to open space, and more than 1,200 private land trusts protect more than 15 million acres of land.[6] Thus, conflict over land development most often occurs on the urban fringe, where land is in the process of being converted to non-agricultural uses.[7] Not surprisingly, much of the conflict over growth management centers on the conversion of land to housing or other commercial purposes that serve growing communities.

Initially, much of the debate over housing development focused on the design of housing in the built environment, not its affordability. The American Planning Association (APA), for example, has been in the forefront of the Smart Growth movement, promoting its "Growing Smarter" initiative as a mechanism for reforming state planning laws.[8] Urban design, rather than affordability, has been its primary focus. In a policy report published in 1998, the APA lists six "principles" of "smart development": efficient use of land, full use of urban services, mixed use, transportation options, human-scaled design, and implementation.[9] Housing affordability is not discussed in the 100-page document, even though changes in architecture and engineering have important impacts on housing costs. Building apartments and office space at higher densities, for example, can increase construction costs by one-fifth to one-third.[10] In strong housing markets, these costs will be passed onto consumers through higher housing prices.[11]

Higher housing costs have significant implications, particularly for low-income residents. Rising housing prices in the Portland area, for example, may have pushed as many as 80,000 homes beyond the thresholds of affordability in the mid-1990s.[12] While public programs and mandates (e.g., inclusionary zoning) might mitigate some of these effects, public initiatives often fall far short of this need.[13] For example, the University of Florida's Shimberg Center for Affordable Housing estimates that approximately 1.75 million of Florida households (about 29 percent of the total) were "cost-burdened" in 1998 once interest rates and affordability thresholds were considered.[14] Approximately 1.35 million (77 percent) of these households were considered low-income (i.e., households having incomes of less than 80 percent of the area median-household income).[15] The 22,134 affordable housing units built with the assistance of state funds in 1998 met only 1.6 percent of the need for cost-burdened, low-income families using the Shimburg Center standards.[16] The total number of cost-burdened households in Florida is expected to increase to 2.1 million by the year 2010.[17]

Yet the relationship between housing affordability, housing markets, and public policy is rarely discussed beyond simple statistical correlations and trends. In 1974, for example, Montgomery County, Maryland,

passed an affordable-housing ordinance that required developers of subdivisions of 50 units or more to dedicate 15 percent of their housing units to the low- and moderate-income housing market, defined as households falling below 65 percent of the county's median household income. The ordinance controls rent limits for 20 years and sales prices for these units for 10 years. An analysis of the program in 1998 by the Innovative Housing Institute concluded that "no significant difference in price trends between non-subsidized homes in the subdivisions with subsidized units and the market as a whole" were evident.[18] One analyst observed that the average sales price of a home was just 40 percent of the county average.[19] The impact of the affordable-housing program on the housing market through its effects on non-subsidized residents was not discussed, even though developers were given a 20 percent density bonus to compensate for the affordable housing dedications.

Similarly, the effects of growth controls on housing costs are rarely discussed by Smart Growth advocates even though the goals of state growth-management laws include affordable housing. Historically, research has consistently found that growth controls tend to increase housing costs.[20] First, they restrict the supply of land, an important component of housing. Zoning, for example, restricts land use by legally dedicating land for particular uses that may or may not be consistent with market trends. If the zoning is inconsistent with market trends, developers are required to seek political approval for any proposed development (through rezoning) or use other, less-efficient land for development purposes. Second, growth-management laws increase development costs by expanding the role of politics in land development.[21] Developers must negotiate with citizens and professional planners, respond to objections to projects whether those objections are to real or perceived features, and conform to numerous stipulations during the project-approval process that may or may not enhance the quality of the project. In fact, most planning reforms as currently designed may significantly increase the transaction costs associated with land development by expanding citizen participation and local government control over real-estate markets.

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A. Housing and Smart Growth in Oregon, Washington, and Florida

The emphasis on housing in growth-management programs varies from state to state. Oregon's legislation, for example, requires all cities and jurisdictions to comprehensively plan their cities, and the housing goal [OAR 660-0150-0000(10)] requires communities to plan for a diverse range of housing needs and types.[22] The "housing element" of the comprehensive plan must include an analysis of the distribution of the current population by income and housing-unit cost, vacancy rates, a forecast of housing demand, an allowance for a variety of densities and housing types, and inventory units capable of rehabilitation. Oregon's goal goes a step further, though: cities must ensure that enough land exists within their urban-growth boundaries to meet the needs of households of all income levels. Given the level of detail and attention paid to housing in this legislation, the lack of understanding or discussion of how the planning process influences the housing market is surprising, suggesting a disconnection between growth-management goals and growth-management implementation.

The connection between housing and affordability was not always clear in the local planning process either. The city of Eugene, for example, adopted 19 growth-management policies in 1998 to guide the city's work programs, including budgeting and revising its capital improvement plan.[23] The first nine policies focus on increasing density within the city's urban-growth boundary, encouraging infill and mixed-use development (downtown and elsewhere), improving the appearance of buildings, and preventing sprawl. The report also declares its intention to diversify housing types within the city, increase densities, and use design standards, open space, and housing-maintenance programs to mitigate any possible impact, including increases in housing prices. In 1998, the city began "land-banking" to preserve space for low- and moderate-income housing to supplement its direct housing subsidies to tenants and builders . In February 2000, the city made almost $2 million available for new housing projects for low-income families. The plan makes almost no provision for ensuring that the supply of housing in the private market stays sufficiently high to mitigate housing-price escalation, despite the fact that the city is one of the least affordable housing markets on the West Coast.[24]

Florida's approach was somewhat different. The framers of its GMA anticipated that the planning process could have negative effects on housing prices and affordability statewide. They tried to alleviate this problem by mandating the inclusion of a housing element in local plans and explicitly directing comprehensive plans to address issues of housing affordability.[25] This housing element is intended to provide guidance in developing appropriate plans and policies to meet projected housing needs for moderate-, low-, and very low-income households.[26]

Despite its goal of promoting housing affordability, growth management has the potential to contribute to housing-price increases rather than mitigate them.

As in Oregon, local governments in Florida are responsible for preparing projections of new households by size and income range, conducting an assessment of housing and land needs tied to those projections, and designating sufficient sites at appropriate densities to accommodate the need for affordable housing.[27] Florida cities and counties are also directed to avoid concentrating affordable housing in specific geographic areas. Florida's administrative rules governing the implementation of the GMA also require the local-housing element to be consistent with the housing goals and policies in the state comprehensive plan. The state's plan includes limiting housing discrimination, developing policies that encourage housing opportunities for all state residents, and increasing the supply of safe and affordable housing for low- and moderate-income populations.[28]

In 1988, the Florida legislature adopted a specific housing goal, stating: "By the year 2010, this state will ensure that decent and affordable housing is available for all of its residents."[29] To help achieve this goal, in 1992 the state enacted the William E. Sadowski Act, which dedicated funds to state-administered affordable-housing programs.[30] Nevertheless, despite the visible and open concern for housing affordability as part of Florida's growth-management legislation, almost no formal analysis of the Act's impact on housing affordability has been conducted by the state's Department of Community Affairs (DCA). Moreover, housing affordability seems to be deteriorating, as the next section discusses—and features of the GMA may be contributing to this trend.

Housing and housing affordability are also important elements of Washington State's growth-management legislation. One of the Washington GMA's fundamental goals is to "encourage the availability of affordable

housing to all economic segments of the population, promote a variety of residential densities and housing types, and encourage the preservation of existing housing stock."[31] To achieve this goal, comprehensive plans must include affordable housing policies, and the housing element of these plans must include an inventory and analysis of current and projected housing needs, an identification of sufficient land for housing, and adequate provisions for needed housing at all income levels.[32]

Washington's growth-management program was modified in 1995 to incorporate changes that influences housing development and affordability, particularly those in the growing Seattle-Tacoma metropolitan area. These changes include streamlining the environmental review process, clarifying the allowable size and location of urban-growth areas using local market factors, and encouraging multi-family residential development in certain urban areas.[33] The 1995 modifications also included provisions to enhance the protection of existing single-family residential neighborhoods.

According to the Washington State Department of Community, Trade, and Economic Development (CTED), communities statewide are using a variety of mechanisms to ensure an adequate supply of affordable housing, including:[34]

- Expanding the range of allowable lot sizes;
- Allowing manufactured housing on individual lots;
- Providing density or height bonuses for including affordable housing in a project;
- Encouraging infill development and rehabilitating older buildings;
- Establishing minimum densities in residential zones;
- Encouraging mixed-used development;
- Allowing accessory dwelling units in single-family residential areas;
- Offering market-rate housing with some units reserved for low-income housing;
- Offering tax incentives for multifamily housing in urban centers;
- Encouraging urban design that blends increased densities into existing neighborhoods; and
- Allowing townhomes and "zero-lot-line" homes (homes built out to lot boundaries with little space between them).

These may have the effect of freeing up the housing market, but little analysis has been done to determine whether these efforts adequately balance additional burdens on real-estate markets imposed by the growth-management and planning process. For example, comprehensive planning may add significant costs to land development if the patterns outlined in the plan and the zoning map are inconsistent with market trends and consumer housing preferences. The growth controls required in the GMA could also compound inefficiencies in the development-approval process and ultimately reduce housing affordability by mandating higher-cost building designs, increasing delays in the development-approval process, forcing development into inappropriate land uses at inappropriate designs; or creating uncertainty about development approval. All of these inefficiencies could increase costs that, combined with land scarcity created by urban-growth boundaries, could drive housing prices up despite the provisions aimed at expediting housing development and reducing regulatory burdens.

Thus, despite its goal of promoting housing affordability, growth management has the potential to contribute to housing-price increases rather than mitigate them. Moreover, this effect is likely to be statewide, although

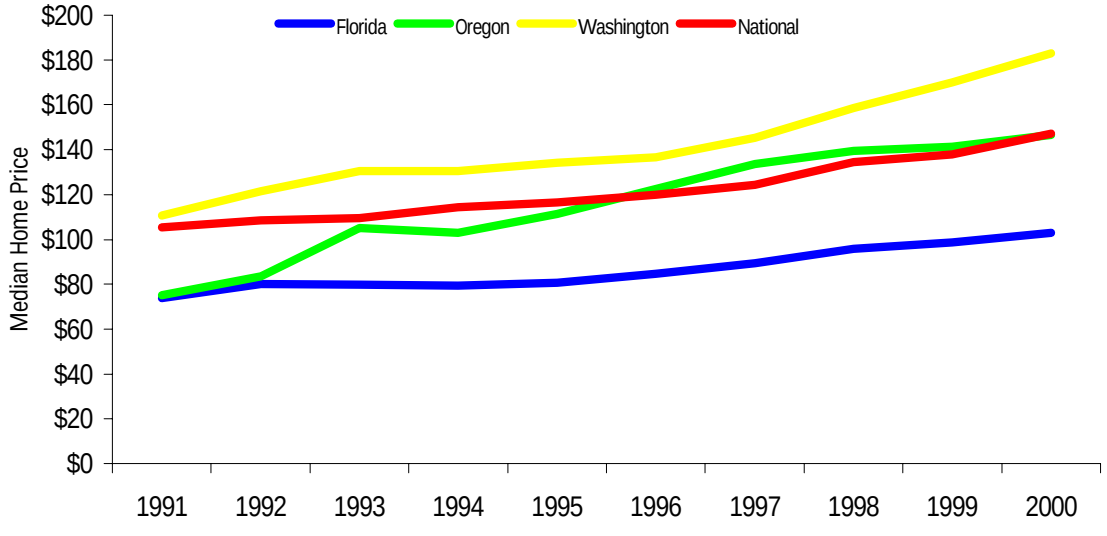
less visible, because it would be distributed throughout the state's construction and land-development industry. Little evidence suggests that statewide growth-management laws will have substantially different effects than local laws. In short, the key question is whether the *net* impact of the GMA will have positive or negative effects on housing prices.

B. Housing Affordability Trends

Unfortunately, consistent statewide data on housing affordability from reliable sources are difficult to obtain. The National Association of REALTORS® (NAR) and National Association of Home Builders (NAHB) collect data for major counties and metropolitan areas and produce their own indexes of housing affordability. While these data have been criticized for their simplicity, they are also relatively easy to interpret and transparent, facilitating analysis by both experts and the lay public and provide a general indicator of housing trends by comparing metropolitan areas within states. (See box on page 9 for data limitations.)

Figure 1 presents summary data provided by the NAR on housing prices during the 1990s for metropolitan areas in Oregon, Washington, and Florida.[35] Median prices for single-family homes increased almost 40 percent between 1991 and 2000 on the national level.[36] Florida's housing-price growth matched national trends in its metropolitan areas, increasing by 39.6 percent over this period. Oregon's housing prices almost doubled, increasing from a median of $75,100 in 1991 to $146,500 in 2000. Washington's home prices increased by more than 65 percent during this period. Thus, in two of the three states with strong statewide growth-management laws, housing prices increased significantly faster than the national average in the 1990s.[37]

Figure 1: Change in Home Prices, 1991 to 2000



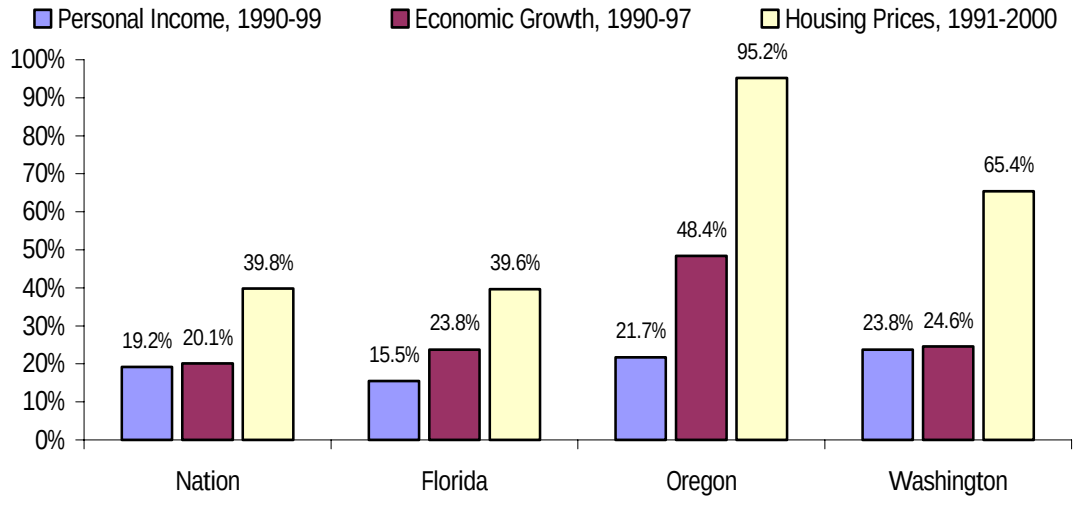
Source: National Association of REALTORS®

Housing-price changes swamped changes in personal income and economic growth. The nation's gross domestic production (GDP) of goods and services increased by 20.1 percent between 1990 and 1997 (the most recent data available), about the same rate as personal income (Figure 2).[38] Housing costs for urban consumers, however, increased by 39.8 percent between 1990 and 1998, according to the Consumer Price Index, and almost 40 percent over the entire decade in metropolitan areas, according to the NAHB.[39] Thus, housing costs that rose more than income and growth were common to these states as well as to the nation at large.

The magnitude of the changes in these states, however, suggests a larger imbalance between housing demand and supply in Oregon and Washington State. Housing prices overall increased more than four times faster than personal-income in Oregon and almost twice as fast as economic growth in Oregon. Florida, in contrast, experienced metropolitan price increases on the same magnitude and scope as the nation.

Rapid population growth is clearly driving the demand for homes up, but the real-estate markets in these states are unable to maintain sufficient supply of the right types of housing for the rising prices to more closely match income growth. In Oregon, some have argued that rapid economic development and growth, combined with higher incomes, created a "speculative bubble" in the housing market that kept housing prices higher than usual.[40] While this may explain an element of the housing-price increases, Oregon's housing prices have increased steadily throughout the 1990s (although the rate of increase has moderated in the latter years of the decade). Interestingly, Washington's housing prices increased throughout the mid-1990s, but then escalated significantly between 1995 and 2000—the years in which the growth-management law took effect. Only Florida appears to have avoided rapidly rising housing prices in the 1990s in its metropolitan areas. Even here, however, metropolitan housing prices increased faster than personal income and economic growth.

Figure 2: Housing Prices, Personal Income, and Economic Growth in Florida, Oregon, and Washington State



Source: Housing price data from the National Association of Home Builders. Income and economic growth data from U.S. Bureau of the Census, *Statistical Abstract of the United States: 2000* (Washington, D.C.: U.S. Department of Commerce), Tables 719, 727.

The data in Figure 1 show only part of the story. Rising incomes, for example, may offset rising household prices. In fact, on a national level, metropolitan-area incomes have risen as fast as housing prices. In Oregon, Washington, and Florida, median household income increased at roughly the same rate—35 percent to 40 percent—as the national growth rate of 39.4 percent (Figure 3). Rising incomes, however, did not completely offset housing prices; home prices increased 44 percent faster than median income in Washington, and more than twice as fast as income in Oregon.

Home Prices, Quality, and Affordability

Housing affordability indexes are one of the most common ways analysts track housing affordability. Most indexes depend on two factors: median-housing prices and median-household income. Conceptually, median income should be a good barometer of what households can afford, and if housing prices increase faster than income, affordability becomes unattainable. Several national organizations have used these indexes, including the NAR and the NAHB.

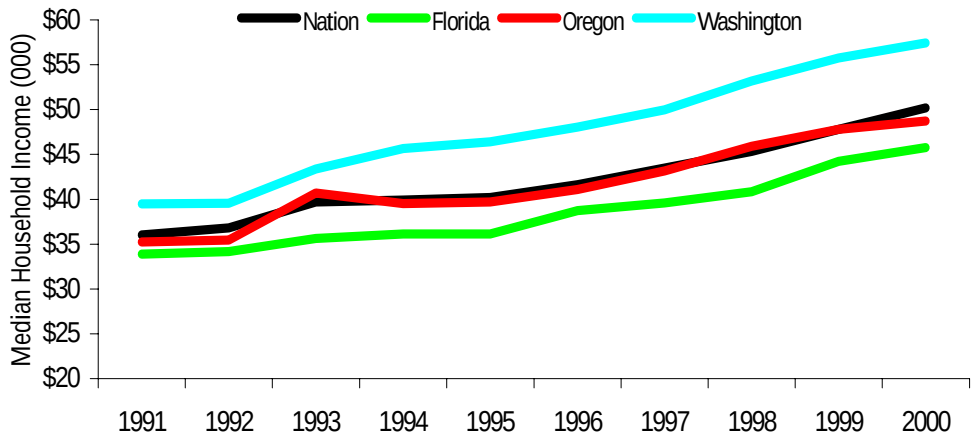
These indexes, however ignore other factors that might affect affordability, such as interest rates and the amount a household spends on housing. To compensate for this, some organizations have adapted their indexes to reflect these influences. The NAHB, for example, includes interest rates in the calculation of its index, and the University of Florida's Shimberg Center on Housing Affordability has added a "threshold of affordability" factor, based on percentage of income spent on housing.

According to a 1998 survey, for example, Florida residents spend an average of 38 percent of their income on housing.[41] Since households paying 30 percent or more of their total household income on housing are generally considered cost-burdened, it is evident that Florida's households on the whole are cost-burdened. Moreover, since the growth of Florida's median owner-occupied home value outpaced median household income growth over the last decade, on an aggregate level housing affordability may well have decreased since 1990.

The indexes have another important flaw: they fail to consider changes in the quality of housing. This is a particularly important item in the Smart Growth debate, because the intent of public policy is to change the quality of housing. For example, the thrust of public policy in Oregon, Washington State, and Florida is to increase urban densities. In most cases, this requires a reduction in lot size for individual houses. Studies of home-buying behavior in Portland, Oregon, however, reveal that lot sizes have important, positive impacts on home values.[42] As lot size increases, so does the market price for the home. Lot size, in fact, may be as important to homebuyers as easy access to parks and large parcels of open space.

Since at least the mid-1990s, Portland's regional planning agency, Metro, has pursued an explicit policy of reducing lot sizes, which will likely continue through the 2040 planning process. Part of this process is formal: the region now has a maximum lot-size standard of less than 8,000 square feet, or one-eighth of an acre.[43] Average lot size had already plummeted from one-fifth of an acre in 1994 down to one-eighth of an acre in 1997.[44] Multi-family housing emerged as the dominant form of homebuilding as well.[45] Another factor driving these changes in lot size is less formal: higher land prices led homeowners to trade off smaller lots for larger homes.[46] Thus, housing-price trends and the actual market behavior of Portland homebuyers strongly suggests that the quality of housing in Oregon has deteriorated as a result of Metro policies. And Oregon is not alone. In sum, growth-management policies appear to conflict with well established patterns and housing preferences.[47]

Figure 3: Trends in Median Income for Major Metropolitan Areas, 1991 to 2000



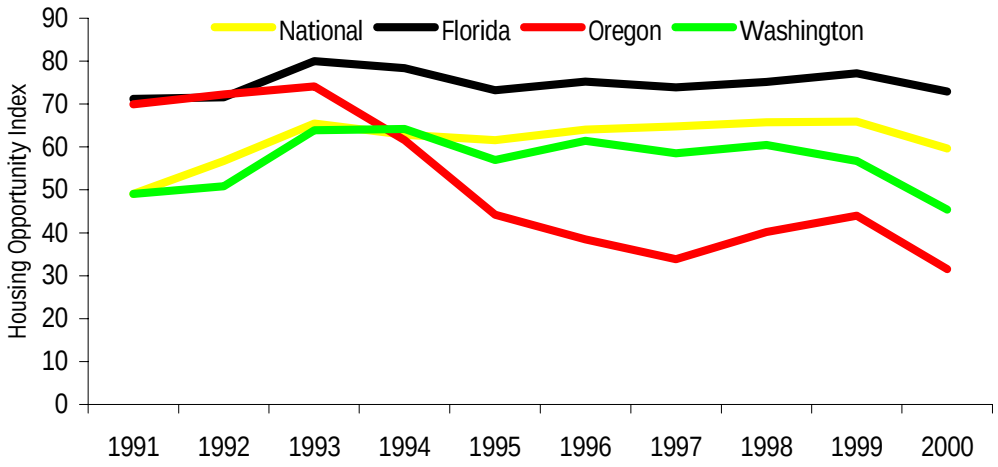
Source: U.S. Department of Housing and Urban Development.

The relationship between median income and housing prices is important for assessing affordability in each of these states. If housing-price increases outstrip income growth, then housing is more expensive relative to income. Thus, while people may still be able to buy (or rent) a home, the house will be smaller and have fewer amenities than if their income had kept pace with housing prices. This is also true for lower- and moderate-income households, and may be particularly important in states with strong growth-management statutes. In Portland, Oregon, for example, lot sizes fell by 25 percent as a result of public policy (see box on page 9).

The relationship between income, housing prices, and affordability is tracked by NAHB and NAR. For brevity, only the home builder association's index will be examined here. NAHB calculates a Housing Opportunity Index (HOI) every three months for most metropolitan areas in the United States, ranking its results on national and regional levels. In addition to median home price and income, NAHB includes interest rates to help control for regional differences in the cost of borrowing to pay for mortgages. The HOI is a measure of the percentage of homes sold that a family earning the median income can afford to buy (without controlling for quality).[48] The higher the HOI, the more affordable housing is in a metropolitan area; a higher HOI indicates that a median-income household can buy a home closer to the median sales price, relative to the entire metropolitan area.

Housing affordability, as measured by the HOI, fell slightly for the nation from 1999 to 2000, although it remained steady through most of the 1990s (Figure 4). In Oregon, housing affordability plummeted during the 1990s, falling by more than half from its peak in 1993.[49] Housing affordability eroded in Washington State as well, although by a smaller amount (7.4 percent since 1991). As in Oregon, affordability peaked at 64.2 in 1994, falling 29.3 percent by 2000. Florida, in contrast, saw affordability erode by 8.9 percent since its peak at 80.0 in 1993. Florida's HOI, however, is still slightly higher in 2000 than in 1991, when the first HOI data were available, suggesting that housing was still more affordable at the end of the decade than at the beginning. According to the HOI, all three states experienced an erosion in housing affordability after 1993, while affordability improved for the nation throughout the 1990s.

Figure 4: Housing Affordability Trends from 1991 to 2000



Source: National Association of Homebuilders.

C. Implications

An initial assessment of home price and housing affordability trends suggests a mixed bag for the three states examined in this report. While housing affordability eroded in all three states between 1991 and 2000, only Oregon and Washington appeared to experience declines significantly greater than the national average. More importantly, housing prices in Washington have increased significantly in the later half of the 1990s, the period in which its GMA began to have an effect. Housing affordability in Oregon fell dramatically during the 1990s (although housing-price appreciation appears to have leveled off by 2000).

Unfortunately, these general trends provide little direct information about the impact of each state's growth-management laws on housing prices and affordability. Other factors, including regional economic conditions and demographic changes, may also affect housing prices. Thus, while the general data are suggestive, they do not provide the level of detail and richness necessary to determine whether state growth-management laws influence housing prices. The next section develops these themes more fully by examining the growth-management programs in Washington State and Florida. Oregon is not examined because data were not available during the 1980s and early 1990s, and Bureau of the Census data for 2000 had not been released as this study went to press. The data limitations prevented a meaningful analysis of housing-price trends, which is unfortunate, because the steep declines in housing affordability clearly warrant significant additional research.

Part 3

Growth Management in Washington

Washington State, like most other states engaging in statewide planning experiments, experienced significant population growth during the last half of the twentieth century. The state's population more than doubled from almost 2.4 million in 1950 to over 4.9 million in 1990, with the lion's share of this growth occurring in the Seattle metropolitan area.[50] Population growth increased at about equal rates each decade, fueling a boom in housing construction and land development. As more and more of its land was urbanized and traffic congestion increased accordingly, citizens and policymakers called for more stringent growth controls on urban development. Fueled in part by Oregon's seemingly successful experience with statewide growth management in the 1970s and 1980s, public support for growth management increased substantially in the late 1980s, laying a foundation for comprehensive planning reform in 1990.[51]

The result was a system of statewide planning that borrowed features from neighboring Oregon (e.g., urban-growth boundaries) but retained a distinctively local approach. Certain rural counties, for example, were not required to plan under the GMA, and planning was developed and implemented at the county level. Despite this relatively decentralized approach, the statewide planning process incorporated a number of features that could, on balance, negatively impact the housing market and boost housing prices.

A. Overview of Growth Management in Washington

Prior to 1990, local land development in Washington was regulated through the Planning Enabling Act, which governed counties, and the Planning Commissions Act and Optional Municipal Code, which governed cities. These statutes authorized local jurisdictions to engage in comprehensive planning activities and proscribed certain planning and administrative procedures.[52] However, these statutes fell short of mandating comprehensive planning on a statewide basis and were neutral with respect to specific growth-management tools such as growth boundaries. In addition to these statutes, the state also adopted the Shorelines Management Act of 1971 and the Washington State Environmental Policy Act of 1971 (SEPA) to promote natural-resource management and environmental quality, following a nationwide trend of using environmental laws to pave the way for planning reform.[53] None of these statutes, however, required local communities to directly control and regulate development to achieve specific, statewide goals. In response to an increasing public demand for controls on urban development, the governor created the Growth Strategies Commission (GSC) in 1989 to recommend a statewide growth-management strategy.

One year after the formation of the GSC, the Washington legislature enacted the Growth Management Act of 1990 (GMA), the state's first comprehensive attempt at statewide growth management. Washington's GMA

requires counties (and the cities within them) to adopt comprehensive plans, tie zoning to those plans, adopt urban-growth boundaries, and meet specific planning criteria.[54] Unlike Oregon and Florida, however, not all counties were required to plan under the GMA. Only large urban counties that experienced population growth of 10 percent or more during the previous decade and counties that experienced growth of 20 percent or more were required to plan. Small, slow-growing, and rural counties could opt out of the state growth-management process.

The 1990 GMA required all counties to adopt a critical areas preservation plan, and a county plan to preserve and conserve resource lands, but only 29 of the state's 39 counties are engaged in comprehensive planning and development control under the Act (see Table 1). Eighteen of these counties are required to plan under the GMA, while 11 have chosen to plan even though they do not meet the criteria for mandated planning. An "opt in" provision thus became an important feature of statewide planning in Washington.[55]

Table 1: GMA Planning Status of Counties in the State of Washington

Mandated Planning	Voluntary GMA Planning	Not Planning under GMA
Chelan	Benton	Adams
Clallam	Columbia	Asotin
Clark	Douglas	Cowlitz
Grant	Ferry	Grays Harbor
Island	Franklin	Klickitat
Jefferson	Garfield	Lincoln
King	Kittitas	Okanogan
Kitsap	Pacific	Skamania
Lewis	Pend Oreille	Wahkiakum
Mason	Stevens	Whitman
Peirce	Walla Walla	
Thurston		
San Juan		
Skagit		
Snohomish		
Spokane		
Whatcom		
Yakima		

Source: Department of Community, Trade, and Economic Development, Washington State.

Once counties begin planning under the GMA, they are required to adhere to GMA's planning mandates even if they no longer meet the criteria.[56] Counties opting into the GMA are also required to meet the GMA's mandates once they have adopted a resolution committing to the process. In other words, while counties can opt in to the state planning process, they cannot opt out at a later point. Counties and cities are also allowed to form regional planning agencies. In fact, the GMA requires multi-county planning policies for the Seattle-Tacoma metropolitan area (King, Pierce, Island, and Snohomish counties).[57]

Counties that meet the GMA planning criteria are required to:

- Adopt a county-wide planning policy;
- Designate and adopt regulations conserving critical areas, agricultural lands, forest lands, and mineral resource lands;
- Designate urban growth areas (UGAs); and
- Adopt a comprehensive plan within a specified time frame.[58]

Washington State's Statewide Planning Goals

Washington State's growth-management process hinges on 14 planning goals that guide the development and the adoption of local comprehensive plans and development regulations: [59]

1. Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner;
2. Reduce urban sprawl;
3. Encourage efficient multimodal transportation systems coordinated with local comprehensive plans;
4. Encourage the availability of affordable housing to all income levels and promote a variety of residential densities and housing types;
5. Encourage economic development consistent with adopted comprehensive plans;
6. Protect private property rights;
7. Process development permits in a timely, fair, and predictable manner;
8. Maintain and enhance natural resource-based industries and encourage the conservation of productive forest and agricultural lands;
9. Encourage the retention of open space and the development of recreational opportunities;
10. Protect the environment and enhance the state's high quality of life;
11. Encourage citizen participation in the planning process;
12. Ensure that public facilities and services necessary to support development shall be adequate at the time of development;
13. Encourage historic preservation; and
14. Ensure consistency with the provisions of the Shoreline Management Act of 1971.

While counties can opt in to the state planning process, they cannot opt out at a later point.

Countywide Planning

The cornerstone of Washington state's growth-management plan is county planning.

Unlike in Florida and Oregon, almost all planning is developed and executed at the county level, with minimal state oversight. The state develops population growth forecasts for the state, and then "allocates" them to counties. Each county is then legally responsible for accommodating this projected growth through the local planning process. How this growth is accommodated (e.g. through higher densities, urban-design criteria, zoning, etc.) is left to the discretion of the counties and their municipalities. To date, unlike in Florida, the state has merely checked plans for their technical compliance with the GMA.

Washington's GMA also requires each county to prepare a countywide planning policy (CPP) to guide its planning process to ensure compatible development and consistency among city and county plans. Cities are required to follow the county plans when they develop their individual plans, and state agencies also must adhere to the county plans (emphasizing again the "bottom up" nature of the planning process). CPPs are required to include the following elements:[60]

- Policies to designate urban-growth areas and boundaries;
- Policies to promote orderly urban development and the provision of urban services;
- Policies for siting public facilities;
- Policies for transportation facilities and strategies;
- Policies for affordable housing (including need and distribution);
- Policies for joint county/city planning within urban-growth areas;
- Policies for economic development and employment; and
- A fiscal impact analysis.

County plans can include requirements as specific as residential density standards, distribution of housing types, commercial and industrial land allocations, and priority development locations within UGAs.[61] Thus, the GMA encourages counties and their local governments to be involved in detailed planning of the urban physical landscape. In addition, as part of the fiscal analysis, counties are required to work with municipalities to determine both the amount of buildable land located within their jurisdictions and future land needs.[62] Counties have substantial discretion over whether cities are planning in accordance with the spirit and letter of the GMA. If the county determines a city's plan does not meet the planning goals outlined in the CPP, it may require the city to adjust its land-use strategies. Finally, counties are required to establish a review and evaluation program to review local plans every five years (beginning in 2002) to ensure that they are providing the land, densities, and capital facilities necessary to accommodate growth.

This localized approach to growth management has an important implication for assessing the housing-price impacts of planning. While the comprehensive plans are tied to state goals, local counties and cities are free to choose particular strategies for achieving the goals. This decentralized approach can potentially encourage competition among local governments that may result in diverse housing. The diversity could in turn mitigate potential housing-price increases by giving developers more options. Diversity of local planning also allows developers to "sort" themselves among local governments by policy goals expressed in the comprehensive plans.[63] Thus, the comprehensive-planning process could create certainty in the real-estate market and potentially reduce transaction costs in land development.

Urban-growth Areas

Containing growth in existing urban areas using growth boundaries is controversial because they may impact the quality and price of housing. By constraining land supplies for new housing, establishing a designated urban-growth area, or UGA, may contribute to upward pressure on housing prices if demand outstrips supply. Moreover, by forcing housing development onto higher cost urban land, housing-price appreciation may be fueled by the higher costs of development as well.[64]

UGAs consist of areas surrounding existing municipalities where urban growth is designated to occur over the next 20 years. Land not in a designated urban-growth area, "critical" area of environmental significance (e.g., habitat or wetland), or a natural-resource area is designated as "rural area," and only rural development is allowed outside of UGAs.[65] Counties designate UGAs in a collaborative process with municipalities and are also responsible for allocating projected population and employment growth (as determined by the state

Office of Financial Management) to cities and unincorporated urban-growth areas. Cities in turn are required to accommodate such allocations in their plans. (UGAs can encompass individual or multiple jurisdictions.)

Washington State's GMA suggests a development hierarchy in which urban growth should be located primarily in areas "characterized by urban growth" with existing public facilities and services, and secondarily in areas to be served by proposed urban facilities and services.[66] Within UGAs, jurisdictions are required to protect critical and sensitive areas, plan for greenbelts and open space, and provide for urban densities of at least four units per acre.[67] Over time, lands within UGAs should be incorporated within cities for the provision of urban services; municipal annexations are not allowed beyond designated growth areas.[68]

UGAs, in principle, can be adjusted as necessary to account for projected population growth so that there is an adequate supply of land for development.[69] In addition to the mandatory review of local comprehensive plans on a five-year basis after 2002, the GMA requires counties to review UGA designations no less than every 10 years to ensure that proper densities are being achieved.

Whether the growth boundaries achieve these goals is the subject of considerable debate. In Oregon, Metro is faced with significant political pressure to maintain existing boundaries by mandating higher densities to prevent its expansion.[70] Some experts have even questioned whether local governments are using the correct criteria for deciding when to expand the growth boundary.[71] Clearly, urban-growth boundaries present a policy dilemma. On the one hand, statewide growth-management laws require governments to expand housing choice and improve affordability. On the other hand, urban-growth boundaries limit the supply of land and can potentially increase the cost of housing, or significantly reduce its quality by limiting specific types of housing (e.g. affordable homes on a one-third-acre lot).

Urban-growth boundaries limit the supply of land and can potentially increase the cost of housing, or significantly reduce its quality by limiting specific types of housing.

Comprehensive Planning

The primary tool for implementing Washington's growth-management goals is the comprehensive plan. Every county and city must adopt a comprehensive plan that is guided by the GMA's 14 planning goals. Each comprehensive plan must include several "elements" or sections that address specific policy issues: land use, housing, capital facilities plan, utilities, and transportation.[72] "Consistency," ensuring goals and strategies complement or do not contradict each other—is required internally within plans as well as between city and county plans.

The land-use element must include a future land-use map, designations of planned population densities and building intensities, and estimates of population growth. The GMA also encourages the use of innovative land-use management techniques such as density bonuses, cluster housing, planned-unit developments, and the transfer of development rights.[73] Each jurisdiction is also required to identify lands for essential public facilities, such as airports; schools; utility, transportation, and open-space corridors; landfills and sewage treatment facilities; and recreation facilities.[74]

All elements of the comprehensive plan must be consistent with the future land-use map. And all comprehensive plans are subject to continual review, evaluation, and amendment under GMA, although plan amendment may occur no more than once per year.[75] The GMA also requires that the plan adoption and amendment process incorporate substantive public involvement.

The comprehensive plan provides the framework for regulating development in each county and city, but each jurisdiction is also required to adopt development regulations (such as zoning ordinances, subdivision regulations, and critical-areas ordinances) to implement the plan. Development regulations must also protect the natural resource lands and critical areas that jurisdictions are required to designate. "Consistency" also requires a plan amendment for changes in development regulations, such as rezoning.

If the comprehensive plan misjudges market trends, developers will be faced with substantial costs as they attempt to tailor proposals to both the comprehensive plan and the consumer's desires.

The goal of comprehensive planning is to use the political process to shape the physical landscape of a community, but the planning process also entails costs. Comprehensive planning can create certainty in real-estate markets by making explicit what communities will approve. However, the planning process can inject significant new costs and uncertainty into the mix as well. If the comprehensive plan misjudges market trends, or requires land-uses inconsistent with current consumer demands (e.g., higher densities than the market will bear), developers will be faced with substantial costs as they attempt to tailor proposals to both the comprehensive plan and the consumer's desires. Inconsistencies between planning and market demand can result from several factors, including:

- Poor and inaccurate population forecasts, such as higher-than-expected population growth;
- Unexpected changes in household composition such as higher-than-anticipated numbers of households without children or more single-parent households;
- Unbalanced zoning for particular uses, such as too little large-scale retail or too much office development; or
- Misjudged housing trends and styles, such as condominiums versus single-family homes with yards.

Any of these failures in the planning process force developers into a higher-cost discretionary-review process that ultimately could impact the cost and quality of housing. Higher prices are particularly likely in strong housing markets where developers will adjust by either raising prices to cover new costs or reducing the number of units they produce.

Several planning-related factors could increase housing prices since, as mentioned earlier, planning tends to increase the politicization of the land-development process by increasing delays, uncertainties, and the transaction costs associated with land development.[76] Builders, in fact, may be some of the most time-sensitive parties in the development process, indicating that further complicating the development-approval process could increase their costs.[77] Early evidence on the effects of Portland, Oregon's growth boundary on land values showed a significant, positive impact based on developers' expectations about the likelihood of project approval inside and outside the growth boundary.[78] Thus, despite an explicit goal in Washington

State's GMA to provide affordable housing, several elements of the planning process established through the GMA could produce results that are opposite its intentions.

Streamlining the Development-review Process

Policymakers in Washington State have made an effort to avoid the red tape, uncertainty, and delay commonly associated with development controls and land-use planning at the local level. Development regulations are intended to ensure predictability and timeliness in the development process, not create new regulatory burdens and uncertainty. Jurisdictions are required by the GMA to establish streamlined permit review and decision processes. They are also encouraged to adopt further project review provisions, including an expedited review of permit applications for projects in conformance with local development regulations that are also within the capacity of system-wide infrastructure improvements.[79]

A 1991 amendment to Washington's growth-management laws established three regional Growth Management Hearings Boards (GMHBs) to hear and determine allegations of non-compliance with the GMA. GMHBs review petitions to determine whether a jurisdiction has complied with the GMA's procedural or substantive requirements and, as such, are the primary quasi-judicial bodies responsible for interpreting GMA's legislative intent.[80] Each GMHB is composed of three members appointed by the governor, who must reside in the GMHB jurisdiction, must have land-use planning expertise, and must include at least one attorney and one former local elected official.[81] The boards are allowed to review only two types of petitions:

- Petitions alleging that a state agency, county, or city is not in compliance with the GMA; or
- Petitions arguing that the 20-year population projections adopted by the Office of Financial Management are incorrect and should be adjusted.[82]

The GMHB must issue a final order within 180 days of the receipt of a petition. If a jurisdiction is found to be in non-compliance, the GMHB will order it to achieve compliance within 180 days while the plan and/or development regulations remain in effect.[83] If GMHB finds that a jurisdiction's plan and/or development regulations are invalid, it or they will be suspended along with all development proposals until compliance is achieved. GMHB decisions can be appealed to the Thurston County Superior Court within 30 days of the final order.[84]

While these are laudable goals, whether they increase or decrease uncertainty in the development approval process has not been evaluated. The GMHB may, in fact, increase uncertainty in at least three ways. First, the GMA invites a level of public participation and growth management that is very detailed and site-specific, increasing the amount of time and investment in the development-approval process. The GMHB will presumably require plans to strictly adhere to these goals. Second, development approvals are tied to an approved comprehensive plan that may or may not be consistent with market trends and conditions. To the extent that markets shift in directions not predicted in the comprehensive plan, delays and uncertainties will increase as a result of the planning process. Third, the GMHBs will have to evaluate whether comprehensive plans meet goals, irrespective of consumer demands and the impacts on housing prices. The hearing boards, for example, have already accepted a minimum four-unit per-acre density standard for determining whether land use is considered "sprawl."

B. Implementation and Impacts on Housing Prices

In contrast with Oregon and Florida's programs, a centralized mechanism for state approval of local comprehensive plans in Washington State does not exist.[85] Counties and cities are granted wide discretion in determining the lands available to accommodate future growth and development. One recent study argues that so much local discretion makes determining whether jurisdictions are meeting their duty to accommodate growth difficult.[86] The Washington Association of REALTORS® suggests that local governments often reduce the density of new residential projects due to community opposition to higher densities, which in turn may prevent them from meeting population and density targets established by counties under GMA.[87] This results in increased housing demand, higher housing prices, and reduced availability of affordable housing.

Many of the challenges addressed by the hearing boards (see box) thus far have concerned growth areas that were initially too large and unable to meet required density targets.[88] Ironically, in order to meet density targets, UGAs would have to be more tightly drawn. The unintended effect could be increased housing prices as more types of land uses compete for less land. Recent statutory changes to the GMA, however, require a range of urban densities and uses and require counties to permit a reasonable supply of developable land within UGAs.[89] Also, the Buildable Lands Program will provide evidence regarding the success of comprehensive planning under the GMA by testing whether existing UGAs are actually providing adequate buildable land to accommodate the allocated growth.[90] Unfortunately, the state has not collected enough information to date to determine whether adequate lands are included in the designated urban-growth areas.[91] A study by Washington State University of Clark County, in the Portland metropolitan area, on the Oregon border found lot prices increased 35.5 percent after the adoption of the county's growth boundary, despite the requirement to maintain a 20-year supply of land.[92] This percent translated into a per-lot price increase of $15,365.

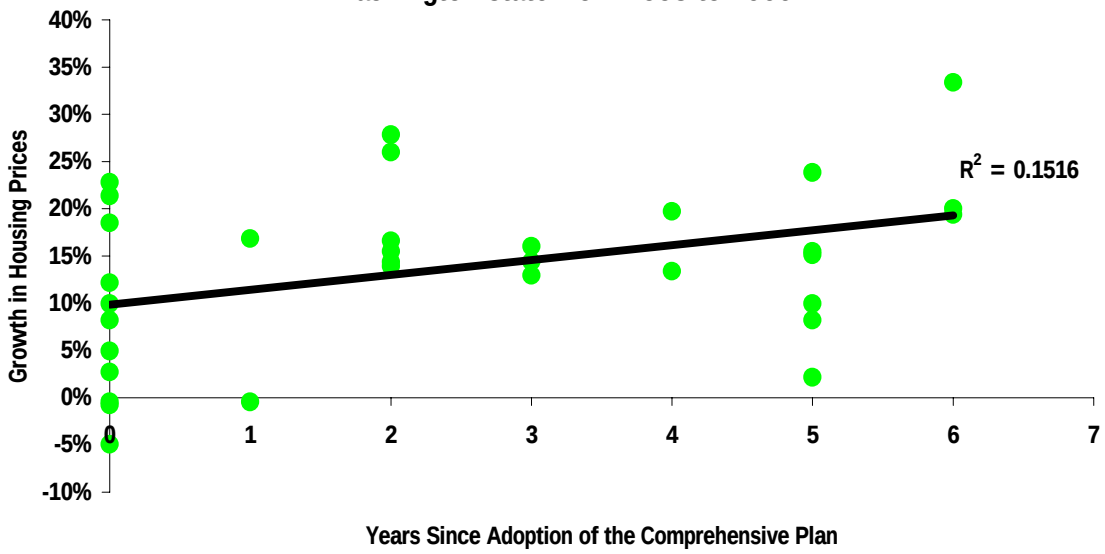
Evidence suggests that the planning process may be imposing significant new constraints on the housing market.

Another more recent study of King County by the Seattle-King County Association of REALTORS® found that local governments were not approving enough housing to meet their planning goals or targets. In an analysis of more than 34 cities in King County, the association found that King County housing production significantly lagged behind the targets established through the planning process. Between 1992 and 1996 alone, the study estimated that at least 8,000 fewer housing units were produced in the county's cities than the targets established in the their plans.[93] Only housing development in unincorporated areas kept housing prices in check.

Thus, anecdotal evidence suggests that the planning process may be imposing significant new constraints on the housing market. Unfortunately, the studies mentioned above were limited to very specific areas. While the Clark County study focused on the impact of the growth boundaries on lot prices, it did not examine effects on housing prices. Similarly, the King County study examined whether the city and county were meeting their housing production targets, not whether the shortages were contributing to housing price inflation. This section attempts to examine the effects of Washington's growth-management law on housing prices in a more systematic way.

Unfortunately, consistent housing-price data were available for only 33 of the state's 39 counties.[94] Housing prices increased about 3.2 percent per year for these counties, but this average masks a few significant differences. Housing prices in four counties—Adams, Grant, Pend Oreille, and Whitman—declined over this period. Only Grant County is required to plan according to the requirements of the GMA. Counties with housing-price growth exceeding 20 percent over the five-year period included Cowlitz, Grays Harbor, Jefferson, King, Peirce, San Juan, and Snohomish. Of these, only Cowlitz was not required to plan under the GMA. King, Pierce, and Snohamish are in the Seattle-Tacoma metropolitan area. Housing prices grew more quickly in counties that had been planning under Washington's GMA (Figure 5). In fact, the simple correlation between housing-price growth and the length of time planning under the GMA suggests about 15 percent of the price growth is related to this effect.[95] On average, counties that were not planning under the state's GMA experienced price increases of 8.6 percent between 1995 and 2000, while those planning under the GMA experienced increases of 15.9 percent over this period.

Figure 5: Housing Price Growth and GMA Implementation in Washington State from 1995 to 2000



Source: Housing price data from Washington Real Estate Center, Washington State University; County compliance data from Washington Department of Trade and Community Development.

These general trends in housing prices and planning, however, do not consider other factors that might also push housing prices higher. In fact, the statewide impact of the GMA on housing prices has not been addressed in a systematic way even though Washington State provides a unique opportunity for this kind of assessment. Unlike Oregon, Washington gives counties the option to plan under the GMA. Thus, a control group exists—non-GMA counties—providing an opportunity to assess effects on housing prices on a statewide basis while controlling for other factors such as changes in income or the degree of urbanization.[96] A more complete discussion of the methods and variables used to estimate the impact of the GMA on housing prices is contained in Appendix A. The key variables used in the analysis were:

- **Median Housing Prices.** The percentage change in the median house price for each county between 1995 and 2000 was used as the dependent variable (the variable that will be explained by the ones listed below).

- **Population Density.** Higher density communities typically have higher housing costs and prices, reflecting greater demand for land and buildings from alternative sources (e.g. commercial or retail uses competing for residential land) and a more concentrated demand for current uses in a more constrained geographic area.
- **Changes in Household Income.** Families and individuals usually want higher-quality housing as their incomes increase. In the United States, higher-quality housing typically means larger homes with more amenities. Moreover, most families increase the quality of their housing by either building or purchasing new units.
- **Changes in Household Size.** Household sizes have been falling for decades, increasing the demand for new housing units. Thus, as household sizes fall, housing prices should increase.
- **Population Growth.** Population growth also puts upward pressure on housing prices as consumer demand for housing increases.
- **Seattle.** Since the Seattle-Tacoma metropolitan area houses three quarters of the state's population, the housing market there may function differently than in other less urban and rural counties. Thus, a variable was added to control for a county's location in the Seattle-Tacoma metropolitan area.

Unfortunately, more detailed data on the quality and type of housing in each of the counties were not available. While this lessens the precision of the statistical analysis, it does not necessarily negate the results or conclusions (see the discussion in Appendix A).

Four additional planning-related variables used in the analysis helped determine whether Washington State's GMA consistently had an impact on housing prices on a state level:

- **Comprehensive Plan Adoption.** This variable is the number of years a county has had a comprehensive plan in place consistent with the requirements/mandates of the GMA.
- **County Planning.** This variable is the number of years a county has had county planning in place under the GMA with or without a comprehensive plan.
- **Zoning.** This variable is the number of years a county has had zoning regulations in place consistent with the GMA to regulate development.
- **Planning Mandates.** This variable is whether the county is required to plan under the state's GMA.

The statistical analysis supports the belief that Washington's GMA significantly influences housing prices at the county level. The analysis explained about 90 percent of the changing in housing prices at the county level between 1995 and 2000 although the lack of complete data suggests conclusions should be qualified. The results are suggestive, but not definitive. A complete discussion of the results can be found in Appendix A, but the results suggest that:

- Higher-density counties tended to experience faster housing-price appreciation than lower-density counties, even after considering the unique characteristics of the Seattle-Tacoma metropolitan area;
- Counties where income grew faster tended to experience higher home-price escalation (income growth was the single most important factor explaining higher housing prices);
- The length of time a county had been planning under the GMA accounted for 26 percent of the estimated growth in housing prices; and

- Whether a county was required to plan under the GMA, the length of time the county has been planning, and the number of years GMA-mandated zoning regulations had been in place did not have statistically significant impacts on housing-price appreciation at the county level.

The impact on housing prices was significant. For example, the statistical model predicts that Washington's GMA added about 0.7 percentage points to the housing inflation rate for each year the county had a comprehensive plan in place.[97] From 1995 to 2000, housing prices increased by 16.9 percent, or 3.4 percent per year. Thus, based on the estimates from the statistical analysis, housing prices would have increased 2.7 percent per year without the effects of the GMA. In comparison, income per household increased by 3.8 percent per year during this period. In short, Washington could have made significant gains in affordability, all other factors held constant, in the absence of its growth-management law.

Policies that encourage more compact development may contribute to a decline in housing affordability rather than an increase.

C. Growth Management and Housing Affordability

The possibility that Washington State could have made gains in housing affordability in the absence of its GMA is illustrated by examining the effects of housing-price impacts on a housing affordability index. The rule of the thumb in housing finance is that people can afford homes four times greater than their yearly incomes.[98] With median home-sales price data and median income, a statewide index similar to the those used by the NAR and the NAHB for metropolitan areas can be used for illustrative purposes. If the median-income household can afford the median-price home sold in the county, the index would be 1.[99] If the median-income household can afford a home greater than its income, the index would be greater than one. In 2000, the median income for a household in Washington state was $37,977, and the median home price was $125,310. Thus, the affordability index was 1.21.

An increase in the index indicates an increase in affordability, therefore the numeric value of the index is less important than the change over time. In 1995, Washington's affordability index was 1.20, so housing on a statewide basis became more affordable between 1995 and 2000 even with the state's growth-management law in place. However, housing would have become even more affordable had the state avoided the home-price appreciation effects of the law (Table 2): the affordability index would have increased to 1.26, or 5.1 percent, in the absence of Washington state's GMA.

Table 2: Housing Affordability in 2000 for Washington State With and Without Statewide Growth Management Effects

	Actual	Without GMA
Median Home Price	$125,310	$120,245
Median Household Income	$37,977	$37,997
Affordability Ratio	1.21	1.26
Change since 1995	0.9%	5.1%

Source: Calculated by authors based on statistical analyses described and reported in Appendix A. (See the discussion of the limitations of the Housing Affordability Index used in this table in the box on page 9.) .

More importantly, the effects of the GMA may be ongoing and cumulative. The planning variables were defined as the number of years each county had a plan in place, and an increase of one year in the amount of time a GMA-mandated comprehensive plan increased housing prices. As plans are in place for longer periods, the GMA could significantly increase housing prices.

D. Implications

The results of the empirical analysis suggest that as much as 26 percent of the housing-price increases at the county level in Washington State may be attributed to the GMA. Overall, the GMA slowed progress in increased housing affordability statewide by as much as 5.1 percent, since housing prices increased at a faster rate than income during this period. [100] The results suggest that population density has an important impact on housing prices as well. Thus, policies that encourage more compact development may contribute to a decline in housing affordability rather than an increase.

The evidence also suggests that the character of the planning mandated through statute may be more important than a general mandate. The planning variables specific to comprehensive planning adopted in Washington State under the GMA were significant and negatively affected housing affordability, while more general planning variables did not. In fact, the simple requirement to plan was not statistically significant and was negatively associated with housing prices. Whether the same impact of growth management is found in Florida is the focus of the next section.

Part 4

Growth Management in Florida

Florida's statewide-growth management efforts, like Washington State's, were jump-started by rapid population growth. Florida's population skyrocketed from 2.77 million in 1950 to almost 12.94 million in 1990, the largest population growth (in both absolute and percentage terms) among all 50 states during that period.[101] Residents and elected officials became increasingly concerned that population and concurrent housing growth would result in environmental degradation, place an undue burden on infrastructure and public services, negatively impact the state economy, and substantially increase traffic congestion.

Florida began developing a growth-management system in the early 1970s, when its population was increasing at the rate of approximately 1,000 new residents per day. An enforceable, statewide growth-management system was not established by the state legislature until the Local Government Comprehensive Planning and Land Development Regulation Act (also known as the Growth Management Act) was passed in 1985. More importantly, the GMA was not implemented until the late 1980s and early 1990s, when all of Florida's counties and cities came into compliance with the GMA.

The impact of growth management on housing prices and affordability was an important element of the original law, and continues to be an issue in current reform efforts. Nevertheless, the State of Florida has not engaged in a systematic assessment of the growth-management law's impacts on housing affordability. Moreover, consistent data at the county level are difficult to find, which hampers independent analysis.

A. Overview of Growth Management in Florida

The Florida legislature enacted the Environmental Land and Water Management Act in 1972, creating a program to protect areas of critical concern and to regulate developments that would have regional impact.[102] This was the state's first foray into growth management, and, like other states, placed environmental protection at the heart of its growth-management efforts. The legislature then enacted the Local Government Comprehensive Planning Act of 1975, which required local governments to develop comprehensive plans. However, the law did not tie local plans to a statewide plan, vision, or goals. Because Florida's planning did not integrate local, regional, and statewide goals into comprehensive planning, many planners believed the requirements were too loose to be effective.

The Role of Florida's State Plan

The State Comprehensive Plan (SCP) is prepared by the governor's office and is reviewed every two years. The SCP sets forth the long-range goals, objectives, and policies to guide future growth in Florida, though it does not contain a future land-use map. It contains numerous goals and policy statements in 26 broad areas:[103]

1. Education
2. Children
3. Families
4. The elderly
5. Housing
6. Health
7. Public safety
8. Water resources
9. Coastal and marine resources
10. Natural systems and recreational lands
11. Air quality
12. Energy
13. Hazardous and non-hazardous materials and waste
14. Mining
15. Property rights
16. Land use
17. Downtown revitalization
18. Public facilities
19. Cultural and historic resources
20. Transportation
21. Governmental efficiency
22. Economy
23. Agriculture
24. Tourism
25. Employment
26. Plan implementation

Many critics, however, argued that the SCP did not provide adequate guidance for local and regional planning and did not adequately address growth and development. In response, legislation was passed in the early 1990s requiring that the SCP include a growth-management section that would provide:

- Guidance for local jurisdictions in identifying resources of state and local significance;
- Recommendations regarding when and to what extent local plans must be consistent with the growth management portion of the SCP;
- Policies related to land development, transportation, natural resources, environmental quality, and affordable housing; and
- Guidelines for determining where urban growth should be encouraged.[104]

The governor's office was unable to implement all these changes, and requested a full evaluation and possible revision of the SCP.[105] In the mid-1990s, the governor's office undertook a review of the SCP and concluded that it was still relevant to the state issues of primary concern; however, a more comprehensive evaluation with respect to growth management was not forthcoming.[106] In 1998, the legislature directed Governor Lawton Chiles to appoint a committee to review the extent to which the SCP addressed the requirement for a growth-management portion. The committee's report identified implementation problems and recommended revisions to the SCP, including the addition of performance measures. In 2000, Governor Jeb Bush appointed a Growth Management Study Commission to undertake a review of Florida's statewide growth-management system and to offer recommendations regarding planning and the future role of the SCP.

Despite these efforts, the planning process may be fundamentally flawed because it attempts to do too much, not too little. Once detailed, forward-looking planning is in place, the tendency is to plan more rather than less, even when the information and decision-making requirements exceed the capacity of planners and the regulatory process to effectively address the issues.

Florida became a leader in reforming its planning laws by putting consistency between state, regional, and local plans as the centerpiece of its reform efforts. The GMA served as the primary vehicle for this reform.[107] Florida legislators attempted to strengthen state oversight of local planning in the mid-1980s and 1990s; the State and Regional Planning Act of 1984 instituted a system of integrated state, regional, and local planning and mandated the development of the first state comprehensive plan (SCP), completed in 1985.[108] The Act also required Regional Planning Councils (RPCs) to prepare and adopt Strategic Regional Policy Plans (SRPPs) consistent with the state plan.

The GMA of 1985 built on these legislative efforts, vertically integrating planning at three levels of government.[109] On the state level, the SCP directs policy at all levels of government and requires state agencies to develop agency plans to implement some of its elements. On the regional level, RPCs adopt regional policy plans consistent with the state plan, but tailored to regional conditions. On the local level, all counties and municipalities are required to adopt state-approved local comprehensive plans consistent with the state and regional plans. The GMA of 1985 also required local development regulations to be consistent with the local plan, authorized the use of financial sanctions against jurisdictions failing to adopt consistent plans, and required citizen participation in the planning process.[110] All of Florida's local governments have now adopted comprehensive plans that comply with the GMA of 1985.[111]

The "consistency" requirement creates an additional burden on the real-estate market that increases incremental costs. Since local plans must be consistent with the state plan, it is difficult to change local plans to reflect shifting market conditions. In addition to the heightened politicization of the process, local communities would also need to get approval from the state (e.g. the Department of Community Affairs).

On the local level, all counties and municipalities are required to adopt state-approved local comprehensive plans consistent with the state and regional plans.

B. Department of Community Affairs

The most important element of the planning process in Florida is the state Department of Community Affairs (DCA). The DCA is responsible for reviewing local plans and ensuring that they are consistent with the state plan, regional plans, and the state planning goals. The importance of state review of local plans was evident early in the process. Most local governments were required to submit their plans for DCA review between 1989 and 1991. Of the 399 cities that submitted plans to DCA, more than half were inconsistent with the goals and requirements of the GMA.[112]

Originally, many thought the Florida growth-management system would be from the bottom up, similar to Washington and other states, since local governments were responsible for developing their own growth-management plans. The DCA, however, has gone beyond ensuring the local plans are technically in compliance. It also evaluates whether it believes the plan will, in fact, further the goals of the GMA. "As a result," notes one critic of Florida's growth-management process, "many local comprehensive plans have been rejected by the DCA for being out of compliance because the DCA determined that the local plan, as written, would be ineffective."[113] In part, this may explain why so many plans submitted by Florida cities and

85 percent of the plans submitted by Florida counties had at least one element that was considered out of compliance with the GMA. [114] In some cases, cities negotiated with the DCA for three or four years before their plans were in compliance.

DCA also reviews plan updates that counties and cities are required to prepare every seven years (14 years for cities with a population less than 2,500).[115] Since all of Florida's communities have now adopted comprehensive plans, DCA's current oversight role mainly involves reviewing plan amendments, periodic evaluation and assessment reports, and plans for newly incorporated communities.

Each local government is required to prepare a comprehensive plan for state review and approval that consists of at least 11 elements, including one focused on housing affordability.[116] Local plans must also include periodic monitoring and evaluation procedures, and local development regulations must be adopted that are consistent with the comprehensive plan. If a local government does not prepare a required plan element, the Regional Policy Council is required to develop and adopt the missing elements. Municipalities are allowed to include unincorporated areas in their plans if they can reach agreement with the county on the boundaries of such areas.

To amend its comprehensive plan, the local government must hold a public hearing in which it formally decides to forward a plan amendment to DCA for review. After DCA reviews the amendment and offers comments, the local government must hold a second public hearing at which it makes a final decision on adopting the amendment. If adopted, the amendment is sent back to DCA for a compliance review to ensure consistency with the state and regional plans. Upon completion of the compliance review, DCA will publish a "Notice of Intent" in the local newspaper stating its decision. Appeals of DCA's findings are forwarded to the Division of Administrative Hearings to initiate a formal proceeding, and, depending on the outcome, ultimately may be sent to the Administration Commission for a final decision. In short, virtually any change in a local plan must be approved by a state agency.

Concurrency and the Burdens of Local Planning

Initially, the most controversial element of Florida's GMA was "concurrency": the requirement that local governments provide adequate public facilities concurrent with new development.[117] As part of the local planning process, local governments are required to delineate those areas intended for urban facilities and services, and local governments are not allowed to issue development permits until they can demonstrate their ability to fund and construct the infrastructure necessary for the new development.[118] The concurrency requirement applies to roads; water, sewer, and drainage systems; solid waste; parks and recreation; and, if appropriate, mass-transit systems.[119]

Many critics of the GMA believed the concurrency requirement would place significant burdens on local governments and developers, primarily because the state legislature did not commit to funding infrastructure at the levels many felt would be necessary to finance roads, sewers, and water to accommodate expected new growth. In practice, the concurrency requirement has been less onerous than expected. The Florida DCA has been flexible by allowing local plans and governments to trade off concurrency requirements with other goals, such as reducing urban sprawl or promoting urban infill.[120] Also, the legislature allowed local governments to identify concurrency areas where local developments could contribute to improve the transportation infrastructure.[121]

An important goal of Florida's GMA is to reduce urban sprawl, and meeting this goal is a telling example of how GMA implementation can affect local planning. In fact, the GMA includes a policy directive regarding compact urban development with the intent of discouraging urban sprawl, improving infrastructure to support redevelopment and infill development, and discouraging urban development in rural areas.[122] Importantly, these planning goals may be at odds with the actual preferences of Floridians, who prefer low-density development along its lakes and rivers and dispersed urban centers, reflecting its automobile orientation.[123] This may create conflict as builders and developers attempt to create housing consistent with consumer preferences while the formal planning process supports planning that is contrary to market trends.

The compact development policy was codified into a rule requiring local governments to conduct a needs analysis estimating the gross acreage needed in each land-use category in anticipation of projected population growth. The rule also requires a cumulative land-use analysis that considers the "extent, location, distribution, intensity, compatibility, suitability, functional relationship and demonstrated need of each land use type."[124] The purpose of this analysis is to evaluate whether the local plan meets the compact development policy goals. The DCA, as mentioned above, also evaluates the plans based on whether it believes the plan will likely achieve the goals established in the GMA of 1985. Communities with plans falling short of these goals can recommend changes to the future land-use map or the adoption of additional strategies to prevent urban sprawl.

As part of the local planning process, local governments are required to delineate those areas intended for urban facilities and services, and local governments are not allowed to issue development permits until they can demonstrate their ability to fund and construct the infrastructure necessary for the new development.

C. Housing and GMA Implementation

Florida's explosive population growth has important implications for the state's housing market and raises the question of how GMA implementation has affected housing prices and affordability. More directly, a general analysis of housing prices and income growth reveal that housing affordability has not deteriorated as significantly in Florida as in Oregon, Washington State, or the nation (Figure 4 on page 11). Even if housing affordability has improved in Florida, the impact of planning could still be significant and could hamper further progress in improving affordability. This section more fully examines this possibility.

According to the U.S. Bureau of the Census, Florida's population grew roughly 63 percent between 1980 and 2000 (increasing from 9.8 million to almost 16 million) while, consistent with national trends, average household size fell (from 2.52 in 1980 to 2.46 persons per household in 2000). Increasing population coupled with decreasing household size increases the demand for housing above what would be demanded by population growth alone. Approximately 6.3 million individual households existed in Florida in 2000, and the Shimberg Center for Affordable Housing estimates that this total will grow to over seven million households by 2010. The Shimberg Center estimates that approximately one million new housing units will be needed between 2000 and 2010 to meet the increased demand.[125]

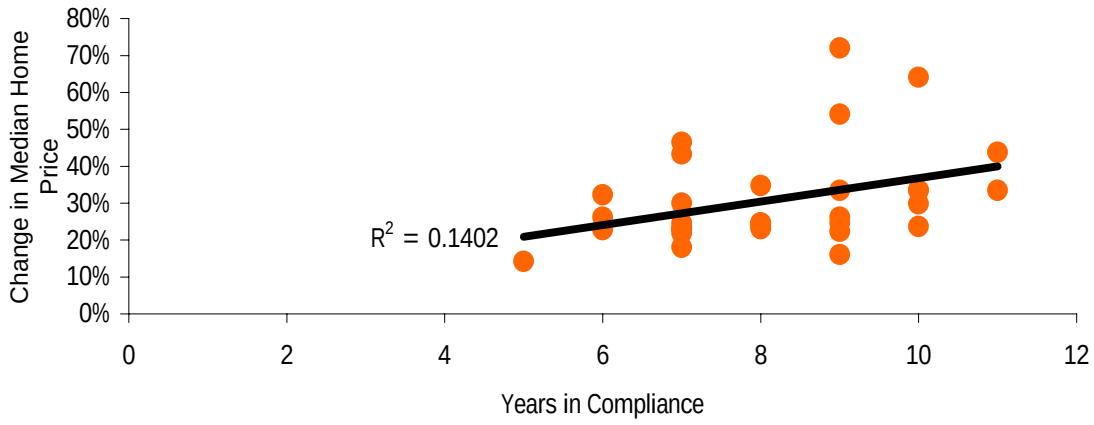
Rising incomes compound the potential problems of meeting rising housing needs. Median household income in Florida increased by almost 36 percent, from $27,483 in 1990 to $37,346 in 2000, creating the demand for new housing with more amenities.[126] While some of the demand may be met by renovating existing units, most homebuyers will prefer new homes with modern characteristics. Not surprisingly, then, the median value of an owner-occupied home increased by almost 40 percent from $77,100 to an estimated $107,342 over the same decade.[127] Using the housing affordability index from pages 21-22, Florida's index fell 2.4 percent over the decade from 1.43 to 1.39.

Florida's system of growth management may contribute to falling housing affordability if the planning process constrains the housing market in a significant way or increases costs for builders and developers. Even DCA's 1997 Florida Fair Housing Summary Report suggests that growth-management regulations may "have adverse effects on affordable housing" and may increase housing costs.[128]

An initial analysis of housing-price growth and planning in Florida's metropolitan areas suggests this, in fact, may be happening. The Florida Association of REALTORS® collects median home price data for each of the state's 20 metropolitan areas.[129] Unfortunately, data are only available since 1994. Nevertheless, they provide a glimpse at the general relationship between housing-price growth and planning in metropolitan counties.

The housing-price growth can be compared to the length of time each county has been implementing a comprehensive plan consistent with Florida's GMA. On average, Florida's 33 metropolitan counties have been planning under the GMA for 8.3 years. If the GMA's impact on housing prices is negligible, no pattern should appear when the two factors—housing-price growth and length of time the county plan has been in place—are compared. But in fact, counties with more experience planning under the state's GMA have experienced higher housing prices, and the relationship seems to be as significant as found for Washington State (Figure 6).[130]

Figure 6: Housing Price Trends and Compliance with Florida's GMA: 1994 to 2000



Note: R^2 also called the coefficient of determination, is a statistical measure used to determine how much of the change in one variable can be explained by the change in a second variable. Source: Housing price data for metropolitan areas provided by the Florida Association of REALTORS®. Data on county compliance with Florida's GMA of 1985 provided by the Florida Department of Community Affairs, Division of Community Planning, August 2001.

Once again, the simple correlation between two variables in not sufficient to determine if the GMA influences housing-price increases. Other factors might also be important, as discussed in the previous section on Washington State, including income growth, population growth, and economic conditions. Unfortunately, less information is available for Florida than for Washington. Median-income data, for example, is not collected by the state, and the NAHB and NAR collect home-price information for only a limited number of counties in major metropolitan areas. Median home-price data simply were not available for rural counties.

Nevertheless, consistent data were available for 20 metropolitan areas and 33 urban counties, and a statistical analysis similar to that used for Washington State was performed for Florida. The results were not as consistent, but the factors included in the analysis explained about 40 percent of the increase in housing prices between 1994 and 2000 (see Appendix B). In brief, the analysis of housing price changes in Florida's urban counties revealed that:

- Density was not an important factor in explaining rising home prices, but the size of the household was;
- Urban counties in the Orlando metropolitan area had significantly lower rates of housing-price increases than other counties and metropolitan areas;
- The number of years a county has been planning in compliance with the Florida GMA significantly increased housing prices, explaining about 20 percent of the growth between 1994 and 2000; and
- Counties bringing their plans into compliance with Florida's growth-management law faster had higher housing-price growth between 1994 and 2000 compared to those that took longer to reach GMA compliance.

While the lack of data and limited number of counties and metropolitan areas requires interpreting the results of the analysis carefully, the results can be placed into the context of housing affordability using the approached applied to Washington State (see pp. 22-23). Two examples are used: a sub-sample of 23 urban counties in 10 metropolitan areas for the period 1994 to 2000, and statewide data for 1990 to 2000. In Florida's major metropolitan areas, housing affordability declined by 15.0 percent between 1994 and 2000 as the index fell from 1.92 to 1.63 (see Table 3). Without Florida's growth-management laws, housing affordability would have still declined, but the rate of decline would have been slowed by one-third. Housing affordability statewide fell by 2.4 percent between 1990 and 2000 based on this index, a decade when the state's growth-management laws were in full implementation. Without the state's growth-management laws, housing affordability would have improved, increasing from 1.43 to 1.47. On a statewide basis, the GMA's effect could have reversed trends toward less affordable housing.

Table 3: Housing Affordability in 2000 for Florida With and Without Statewide Growth Management

	Metropolitan Area (1994–2000)		Statewide (1990–2000)	
	Actual	Without GMA	Actual	Without
Median Home Price	$112,800	$107,374	$107,342	$101,294
Median Household Income	$45,922	$45,922	$37,346	$37,346
Affordability Ratio	1.63	1.71	1.39	1.47
Change from 1994/1990	-15.0%	-10.7%	-2.4%	3.4%

Source: Analysis based on statistical analysis and results reported in Appendix B. For a discussion of the affordability index in this table and its possible limitations, see the discussion in the text box on page 9.

Unfortunately, the data for this analysis are incomplete. As noted earlier, rural counties were excluded, and complete data for all counties between 1994 and 2000 were unavailable. University of Iowa planning professor Jerry Anthony has conducted one of the most detailed analyses of the impacts of Florida's statewide growth-management regulations on housing to date, focusing on the period in which the growth-management laws were implemented between 1980 and 1995.[131] Anthony's selection of time period facilitated the examination of trends before and after GMA adoption since the GMA was enacted in 1985 and almost all local jurisdictions adopted development plans by 1991.

Anthony tested the hypothesis that implementation of Florida's statewide growth-management regulations increased single-family home prices after statistically controlling for housing demand, policy environment factors, and certain attributes of housing supply. More specifically, Anthony's analysis controlled for the adoption of county-level plans consistent with GMA, the growth of the residential housing market, changes in median household income, the quality of housing in each of Florida's counties, and federal legislation with potential impacts on housing markets nationwide. Anthony's results support the relationship found in Figure 6 and in Appendix B. More specifically, Anthony found Florida's GMA increased housing prices and lowered housing affordability, although unfortunately he did not calculate magnitudes from his results. The enduring relationship between GMA planning and housing prices in the later half of the 1990s suggests that Anthony's results are still valid even though his analysis stopped in 1995.

Growth-management regulations increased median single-family home sale prices on a statewide level in the period immediately following their implementation.

D. Summary Implications

Evidence on housing-price trends and comprehensive planning in Florida confirms the analysis presented for Washington State: growth-management regulations increased median single-family home sale prices on a statewide level in the period immediately following their implementation. This relationship is evident using summary data as well as more sophisticated statistical analysis that controls for factors such as changing household incomes, single-family home quality, and public policy. Moreover, the effects are sufficiently large to reverse trends in housing affordability in Florida.

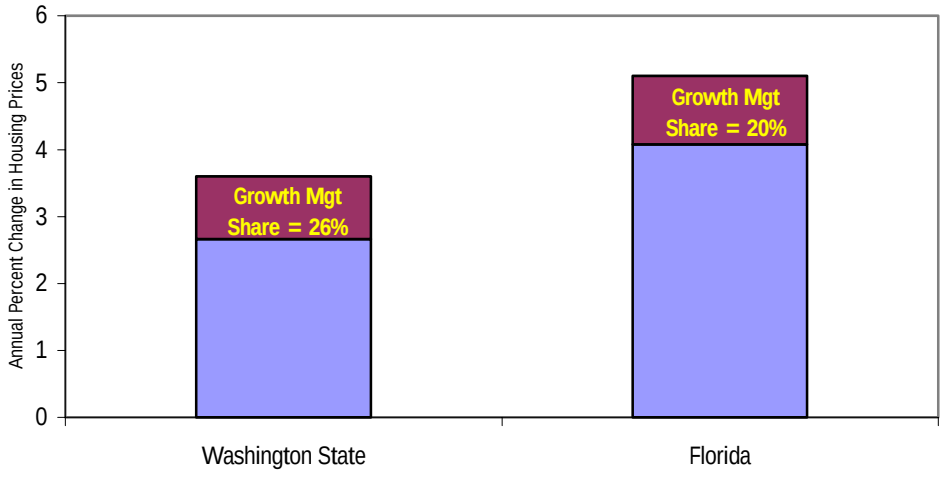
While not definitive, housing price trends in 20 Florida metropolitan areas suggested that Florida's growth-management laws may have added as much as 20 percent to the rising cost of housing. On a statewide level, these effects could have reversed trends that lowered housing affordability during the 1990s. The research by Jerry Anthony is particularly noteworthy (and consistent with the results in this section) because of its robust character and the rigor of his analysis. In addition, the results in this section add weight to the estimates found for Washington State, where growth-management policies had impacts of similar magnitude.

Part 5

Policy Implications

This study found a disconnection between the goals of statewide growth-management laws that seek to ensure affordable housing for their residents and the effects of these growth-management policies when implemented. GMA implementation has resulted in higher housing prices and decreased housing affordability in both Washington State and Florida, thus making the goal of home ownership less attainable for renters and lower-income households. Overall, more than one fifth of the increase in housing prices in Washington and Florida appears to be attributable to their statewide growth-management laws (see Figure 7). In Washington, the GMA may be accountable for more than one-third of the decline in housing affordability during the latter half of the 1990s.

Figure 7: Estimated Impact of Statewide Growth Management on Annual Housing Prices



Source: Analysis by authors.

The results of this study suggest that some of the goals of Smart Growth advocates may be inconsistent with the realities of housing development. To the extent that more compact, higher-density urban development is encouraged through growth-management laws designed in ways similar to Florida, Washington, and, by extension, Oregon, higher housing prices could result. First, higher-density urban areas are associated with higher housing prices as more people compete for a more scarce resource: land. Second, by forcing

development into existing urban areas, housing development will take place in fast-growing areas, propelling consumers to bid up the price of land. These were important findings from the Washington State analysis.

Likewise, GMA implementation has made it more difficult for existing homeowners to purchase larger homes to better meet their families' housing needs. By effectively limiting housing choices—and thus neighborhood choices—the GMAs have reduced the opportunity for residents, particularly lower-income groups, to choose for themselves where they will live and work and educate their children.

The decreased housing affordability resulting from GMA implementation suggests that measures to check housing affordability were either inadequately designed or have not been implemented consistently by counties and local governments when these statewide growth-management systems were created. An analysis of the housing elements of 10 local comprehensive plans in Florida, for example, found that only 20 percent of them demonstrated a "clear and strong link between technical analysis, goals, objectives, and policies."[132] A 1999 report by Florida's Affordable Housing Study Commission (AHSC) found that the GMA requires local plans to provide detailed information regarding the location, cost, and funding sources for a variety of community infrastructure needs (e.g. road, water, and sewer systems), but sets the bar lower for affordable housing. Local governments are required to quantify the affordable housing deficit in the housing elements of their plans but not how they will address such a deficit.[133]

These problems may be compounded by the very structure of the state GMAs. While explicitly including goals to promote housing diversity and affordability, they often require planning mandates that are likely to increase housing costs. Thus, a breach exists between planning goals and planning implementation. This is particularly notable in policies aimed at reducing sprawl. By encouraging higher-density development, urban planning is likely laying a foundation for increased housing prices unmatched by increases in incomes and other factors, resulting in deteriorating housing affordability.

This fundamental contradiction in the planning process is unlikely to be resolved by refining regulations and imposing more development controls.

This fundamental contradiction in the planning process is unlikely to be resolved by refining regulations and imposing more development controls. Though housing element requirements call for local governments to provide for adequate sites for affordable housing, the lack of guidance regarding how this is to be accomplished already leads to a "piecemeal approach to planning for affordable housing," despite requirements mandating consistency.[134] In Florida, the AHSC notes that some communities fulfill the housing requirement by delineating high-density residential areas on their future land-use maps, even though this approach does not guarantee the future availability of designated lands for such uses and could lead to an over-concentration of affordable housing in one geographic area.[135] In Washington State, communities designate land for particular types of uses (e.g. high density, mixed use, etc.) despite an apparent lack of demand for those uses. Some communities address the housing requirements by indicating that land for affordable housing is already built-out and that there is no more land available for affordable housing. Other communities assert that either there is no affordable housing need in their community or that such needs have been met by adjacent communities.

Moreover, the evaluation process appears to be flawed, in part because the plans fail to accept real-estate markets as a fundamental element of housing production or put future consumer wants at the center of their

planning efforts. Florida's GMA requires the preparation of periodic evaluation and appraisal reports (EARs) to assess the degree to which local comprehensive plan goals and objectives have been realized. Local governments are required to adopt plan amendments based on this evaluation, and both the EARs and related plan amendments require state approval. This process provides an opportunity for local governments, DCA representatives, and housing advocates to evaluate whether local affordable housing needs are met, but the results of this and other research indicate that this oversight process has been less than effective with regard to housing.[136] Moreover, these processes may evaluate existing housing conditions, but are unable to forecast future conditions or needs. Washington State, in contrast, is attempting to address these issues by establishing a Buildable Lands Commission that will evaluate and track land availability within the growth boundaries established by local planning.

Nevertheless, policymakers should be skeptical of attempts to achieve affordable housing goals without a full appreciation for their impact on real-estate markets. The American housing market is dynamic, and current comprehensive planning tools may not be able to capture this dynamism. This is particularly true in the context of America's legal system, which continues to protect property rights and respects the importance of meeting consumer demands for most goods and services, including housing. Strong growth-management laws that tie local planning to statewide goals run the risk of further politicizing the development process, increasing transaction costs, and creating an imbalance between housing supply and demand. This disequilibrium may exist in the aggregate as well as for specific types of housing, putting upward pressure on housing prices and, ultimately, reducing housing affordability.

Appendix A

Estimating GMA Impact on Housing in Washington State

Regression analysis was used to more fully assess the impacts of state growth-management laws on housing prices. Regression analysis is a statistical technique that allows researchers to examine the relationship between variables while holding other factors constant. This study, for example, attempts to examine the relationship between housing prices and the implementation of state-growth management plans. While a relationship appears to exist (see Figure 5 on page 19), a simple correlation such as this cannot examine the influences of other factors that might affect the price of a home, such as income or the size of the house.

Ideally, the regression equation would include all the factors that influence housing prices. In the real world, however, researchers are constrained by the data available for the analysis. In the case of Washington State, data for some variables such as home size and quality do not appear to exist. Thus, the conclusions are based on statistical *probabilities*—i.e., the likelihood that a relationship exists. Importantly, the existence of a statistical relationship does not necessarily establish *causality*. Some factors, for example, actually may be masking others that researchers cannot specify. Nevertheless, in an imperfect world with limited data, regression analysis is a very useful tool for analyzing the strength of these relationships and drawing some conclusions, even tentative ones, about causation.

As mentioned earlier, housing prices may be caused by several factors: changes in household size, quality of housing, availability of housing, etc. The variables included in this study, and their anticipated impact on housing prices, are summarized in Table A1.[137] The variables are discussed further in the text as well.

Table A1: Anticipated Impacts of Variables on Housing Prices, 1995 to 2000

Variable	Unit	Relationship to Housing Prices
Density	People per sq. mile	Positive
Change Household Income	Percent	Positive
Change in Household Size	Percent	Negative
Population Change	Percent	Positive
Seattle	Dummy (1 for Seattle)	Positive
Comprehensive Plan Adopted	Years since adoption	Positive
County Plan Adopted	Years since adoption	Positive
Zoning Plan Adopted	Years since adoption	Positive
Comprehensive Plan Required	Dummy (1 for Mandated)	Positive

Source: Population and density data were calculated from the U.S. Bureau of the Census. Data on household size, income, and planning were obtained from the Washington Department of Community, Trade, and Economic Development. Planning data are current through May 25, 2001. Housing price data were obtained from the Washington Center for Real Estate Research, Washington State University.

Table A2: Descriptive Statistics for Key Variables				
Variable	Mean	Std. Dev.	Min.	Max
Housing Price Change (%)	16.9	12.2	-4.7	50.1
Density (persons/sq. mi.)	134.0	198.9	3.4	789.8
Change Household Income (%)	18.2	5.7	2.8	34.4
Change in Household Size (%)	1.0	21.1	-5.4	118.3
Population Change (%)	8.3	4.0	0.1	17.1
Comprehensive Plan Adopted (years)	2.39	2.19	0	6
County Plan Adopted (years)	6.09	3.00	0	8
Zoning Plan Adopted (years)	1.48	1.80	0	5

Source: Analysis by authors.

A cross-sectional analysis was performed using regression analysis for the 33 counties in Washington State for which complete data were available. Small sample sizes are problematic, statistically, because with fewer observations, identifying relationships among variables is more difficult. The smaller the sample size, and the more variables in the equation, the less likely a statistically relevant relationship will be found. Moreover, in the initial regression runs using "ordinary least squares," heteroskedasticity was evident. To compensate for this, the regressions were performed using "generalized least squares" and assigning "density" to the P-matrix after an analysis of residuals.

The regression results were significant (Table A3). Each of the estimating equations explained more than 90 percent of the change in county housing prices between 1995 and 2000. Most variables are consistent and statistically significant.[138] Higher population densities significantly increased county housing prices, suggesting that more urban environments are more costly places to live, consistent with expectations about the demand for land in compact areas. Similarly, counties with more rapidly rising incomes experienced higher housing-price appreciation (but the results were statistically insignificant). Counties in the Seattle metropolitan area (Island, King, and Snohomish) are associated with significantly higher housing prices, suggesting that location does, in fact, affect housing market dynamics in the state of Washington. (Changes in household size do not appear to significantly impact housing prices.)

The models were estimated by entering the planning variables separately to avoid the problems of multicollinearity.[139] At first, the results may seem inconsistent: one planning variable was significant and three variables were not. A finer-tuned analysis, however, reveals that Washington's growth-management law has had significant impacts on housing prices.

Whether a county is required to plan had little impact, a result initially at odds with expectations: if the GMA has statewide impacts, we would expect counties that are required to plan to experience higher housing prices. In Washington State, however, rural counties are not required to plan. While they experienced high population growth rates, their densities and incomes were also significantly lower. Thus, planning under the Washington GMA is unlikely to be a binding constraint in rural counties. In fact, planning already existed in larger and more urban counties prior to the enactment of the GMA. Thus, the housing price data suggests that planning in and of itself may not increase housing prices.

Table A3: GLS Regression Estimates for Housing Price Impacts of Washington Growth Management Act

Dependent Variable: Growth Rate of Median House Price, 1995 to 2000 N = 33	Coefficients/(t-statistics) Model 1	Model 2	Model 3	Model 4
Density	0.0157 (2.72)**	0.0209 (2.43)**	0.0166 (2.81)**	0.0204 (3.131)**
Change Household Income	0.7252 (2.68)**	1.1674 (5.82)**	1.0048** (4.57)	1.1615 (6.02)**
Change in Household Size	-0.0471 (-0.14)	-0.059 (-0.16)	-0.0508 (-0.14)	-0.0536 (-0.15)
Population Change	-1.0229 (-1.88)*	-0.0211 (-0.37)	-0.9969 (-1.52)	-0.0534 (-0.12)
Seattle	6.9211 (3.92)**	6.9001 (3.64)**	7.7856 (4.08)**	6.9994 (2.84)**
Comprehensive Plan Adopted	1.4724 (2.24)**	—	—	—
County Plan Adopted	—	-0.8619 (-0.55)	—	—
Zoning Plan Adopted	—	—	1.2338 (1.56)	—
Comprehensive Plan Required	—	—	—	-16.103 (-1.57)
Constant	1.9249	-6.8403	-3.1841	3.0212
Adjusted R-squared	0.9280	0.9150	0.9214	0.9215
F (from Mean)	69.698	58.430	63.53	63.584

Notes: * *Denotes statistical significance using two-tailed test at 98 percent level; * denotes statistical significance using a two-tailed test at 90 percent level. Source: Analysis by authors.

While three of the four planning variables were not statistically significant, these results do not necessarily suggest that the GMA's impact has been minor. Each of the planning variables captured a different element of planning in Washington. County plans, for example, have been in place longer than comprehensive plans under the GMA. Most counties have been planning for eight years on average, while comprehensive plans have been in place for about four years and zoning regulations have been in place for less than two years. Thus, planning in and of itself may not discourage land development.

The most important planning tool is the comprehensive plan. The comprehensive plan is the policy document that establishes the general framework for development regulation in the county; all other subdivision and zoning regulations are keyed to the comprehensive plan. The variable most directly related to the impact of the GMA was how long a county had been planning in compliance with state law.

The magnitude of these effects over the entire five-year period is calculated in Table A4. Housing prices increased by 16.9 percent from 1995 to 2000 for the 33 counties in the sample. Adopting a comprehensive

plan consistent with the GMA saw housing prices increase by 3.5 percentage points. In other words, about one fourth of the actual increase in housing prices (26.1 percent of the estimated price increase) statewide can be accounted for by the GMA.[140]

In contrast, adding one more person per square mile would increase housing prices over five years by 2.1 percentage points. Each percentage-point increase in the change in median household income in each county will increase housing prices by 13.8 percentage points, while each percentage point reduction in population growth rates will reduce housing-price appreciation by 8.5 percentage points. Although statistically robust, the housing-price effects of being located in the Seattle metropolitan area are swamped by the effects of the GMA.

Table A4: Effects of Variables on Housing Price Growth in Washington

Estimated Five-year Impacts		Percentage Point Impact			
	Mean	Model 1	Model 2	Model 3	Model 4
Density	134.00	2.1	2.8	2.2	2.7
Change Household Income	19.03	13.8	23.2	19.1	22.1
Change in Household Size	1.04	-0.1	-0.1	-0.01	-0.1
Population Change	8.33	-8.5	-0.2	-8.3	-0.4
Seattle	0.103	0.7	0.7	0.84	0.7
Comprehensive Plan Adopted (years)	2.39	3.5	—	—	—
County Plan Adopted (years)	6.09	—	-0.5	—	—
Zoning Plan Adopted (years)	1.48	—	—	1.8	—
Comprehensive Plan Required (dummy)	0.79	—	—	—	-12.7
Growth Mgt. Share of Estimated Price Change	—	26.1%	2.9%	14.7%	102.6%
Growth Mgt. Share of Actual Price Change	—	20.7%	3.1%	10.8%	74.8%

Source: Analysis by authors.

Appendix B

Estimating GMA Impact on Housing in Florida Metropolitan Areas

Statistical analysis similar to that used for Washington State (see Appendix A) was applied to metropolitan areas in Florida. Florida has 20 metropolitan areas, according to the U.S. Bureau of the Census, ranging in size from Miami-Dade County with 2.2 million residents to Fort Walton Beach with just 170,492 residents. Most of the metropolitan areas are along the coast, a demographic reminder of the state's primary amenities: environment and climate. Housing-price data for each metropolitan area were provided by the Florida Association of REALTORS®. Unfortunately, detailed demographic and home-price data were not available for rural counties for the late 1990s, limiting the analysis to a few important variables. Median household income and other detailed demographic data, unlike in Washington State, are not collected by the state of Florida at the county level.[141] As in the case of Washington, dummy variables were used to proxy for large metropolitan areas (1=county in a large metropolitan area).

Since variables often have different influences in urban environments than in rural areas, the models may explain less of the variation in housing prices. In other words, the model may not "fit" the data as well in Florida as in Washington State, where more complete data were available for all counties.

Three variables were used to proxy for the implementation of Florida's growth-management law (see Table B1). The first, "compliance," consisted of the number of years the county has been implementing its growth-management polices under a comprehensive plan approved by the Florida DCA. "Published" refers to the year the first comprehensive plan was published or became a legally binding document, whether the plan was in or out of compliance. "Difference" is a variable measuring the number of years between the time the first comprehensive plan was published and their plan was approved by the Florida DCA. The first two growth-management variables are expected to have a positive influence on housing prices because they make development more difficult. "Difference" may have positive or negative impacts on housing prices. If having a plan out of compliance with Florida's GMA creates uncertainty about development approvals, the relationship could be positive since more uncertainty would imply higher costs for housing development. If, on the other hand, GMA development guidelines create a more costly development environment, and the current environment is more conducive to housing development, the relationship would be negative: the longer a county stays out of compliance with the state GMA, the more easily the housing market will be able to adjust to changing market conditions.

Table B1: Anticipated Impacts of Variables on Housing Prices from 1994 to 2000		
Variable	Unit	Relationship to Housing Prices
Density	People per sq. mile	Positive
Change in Household Size	Percent	Negative
Orlando	Dummy (1 for Orlando	Negative
Compliance	Years since achieving compliance with GMA	Positive
Published	Years since GMA plan first published	Positive
Difference	Years until Plan was in compliance with GMA	Negative or Positive

Source: Analysis by authors.

Population, land area, and housing price data were collected for 32 counties (see Table B2 for descriptive statistics).[142] On average, housing prices increased 30.9 percent between 1994 and 2000 in Florida. Housing prices grew most quickly in St. Lucie County (Fort Peirce metropolitan area), increasing by 72.1 percent. Collier County (Naples) followed closely with price growth of 64.1 percent, followed by 54.1 percent in Bay County (Panama City). Counties with the slowest housing-price growth were Polk (14.2 percent) in the Lakeland-Winter Haven metropolitan area, Martin (16.1 percent) in the Fort Pierce metropolitan area, and Palm Beach (18.1 percent).

Preliminary statistical analysis, however, revealed that the variables needed to be transformed to create a more accurate fit and interpretation of the data and solve for heteroskedasticity and multicollineary among the variables and error terms. The log of housing prices was used as the dependent variable, recognizing its nonlinear relationship with the explanatory variables. Thus, the actual price increase, using the log estimation, was 3.4 percent over this time period.

Table B2: Descriptive Statistics for Key Variables for Florida Metropolitan Areas				
Variable	Mean	Std. Dev.	Min.	Max
Housing Price Change (%)	30.9%	13.2%	14.2%	72.1%
Log of Housing Price (%)	3.4%	0.4%	2.7%	4.3%
Density (persons/sq. mi.)	904.9	470.3	280.0	2,026.0
Change in Household Size (%)	-1.4%	2.6%	-7.2%	4.3%
County Compliance with GMA (years)	8.2	1.5	5.0	11.0
County Plan Adopted Under GMA (years)	10.0	1.0	8.0	12.0
Years to Become Compliant (years)	1.9	1.3	0.0	5.0

Source: Data on housing prices from the Florida Association of REALTORS®. Demographic data are from the U.S. Bureau of the Census for 1990 and 2000. Median income data were not available as this study went to press. Planning variables were created from data on county and city compliance provided by the Division of Community Planning, Florida Department of Community Affairs.

On average, counties have been in compliance with Florida's GMA for 8.2 years. Some counties have been in compliance for 11 years—their initial plans were approved by the DCA because they were determined to be in compliance with the GMA. Counties (and their metro areas) submitting initial plans compliant with the GMA include: Broward (Ft. Lauderdale), Pinellas (Tampa), Seminole (Orlando), and Volusia (Daytona Beach). On average, counties required almost two years to bring their plans into compliance and more than two-thirds were initially rejected by the DCA. Charlotte County in the Punta Gorda metropolitan area took the longest to become compliant: five years.

The statistical results were weaker than in Washington State (see Table B3). The regression models explained about 40 percent of the variation in housing prices in Florida's metropolitan areas. Population density does not appear to have as significant an impact on housing prices as in Washington, although changes in household size and whether a county is located in the fast-growing Orlando area had significant impacts. Household size fell during the 1990s by 1.4 percent, but smaller households are associated with higher housing prices. These effects are opposite those found in Washington, but the counties examined in Florida are largely urban.

Among the non-planning-related variables, the geography variable for Orlando is statistically significant and negative. Thus, locating in the Orlando area is associated with significantly lower housing prices. Other regressions using dummy variables for Tampa, Miami, and a more inclusive variable covering all large urban counties, were not statistically significant.

Table B3: GLS Regression Estimates for Impact of Florida Growth Management Act on Metropolitan Housing Price from 1994 to 2000

Dep. Variable: Median Home Price (log)	Coefficients/(t-statistics)		
N = 32 Metropolitan Counties	Model 1	Model 2	Model 3
Density	-0.0004 (-1.07)	0.0.0024 (0.74)	-0.0003 (-0.77)
Changes in Household Size	0.0262 (1.65)	0.03306 (1.82)*	0.0329 (2.12)**
Orlando	-0.2112 (-2.24)**	-0.1088 (-0.6)	-0.3444 (-3.24)***
Years County in GMA Compliance	0.08106 (2.54)***	—	—
Years Since Comprehensive Plan	—	0.0770 (0.84)	—
Years Until County Was Compliant	—	—	-0.0815* (-2.33)***
Constant	2.776	2.603	3.626
Adj. R2	0.4112	0.2892	0.3923
F (from Mean)	6.413	4.152	3.003

Notes: * Statistically significant using two-tailed test at 90 percent level; ** denotes statistical significance using two-tailed test at 95 percent level; *** denotes statistical significance using a two-tailed test at 98 percent level. Source: Analysis by author.

The planning variable is a continuous one: the longer a county has been in compliance, the higher the impact on housing prices.

Despite the weak estimates for density and household size, the planning variables perform relatively well. The number of years a county has been in compliance with the Florida GMA has a statistically significant, positive impact on housing prices. Similarly, counties that came into compliance with the GMA more quickly also experienced higher housing prices. The statistical significance of both these variables lends support to the interpretation that Florida's GMA is associated with higher housing prices.

The effects of these variables on housing prices are summarized in Table B4. About 20 percent of the increase in housing prices since 1994 in Florida's metropolitan areas may be attributable to Florida's growth-management law based on the number of years a county has been complying with its features. Moreover, the planning variable is a continuous one: the longer a county has been in compliance, the higher the impact on housing prices.

Table B4: Effects of Variables on Housing Price Growth in Florida

Estimated Six-year Impacts		Percentage-point Impact		
	Mean	Model 1	Model 2	Model 3
Housing Price Increase (Log, actual)	3.4%	—	—	—
Density	134.00	-0.2281	1.2606	-0.1581
Change in Household Size	-1.4%	0.0004	-0.0005	-0.0005
Orlando	—	0.0264	-0.0136	-0.0431
Year County Came Into Compliance*	—	0.6611	—	—
Year County Published Comp. Plan	—	—	0.7728	—
Years Required to Reach Compliance	—	—	—	-0.1528
Growth Mgmt. Share of Estimated Price Change	—	20.8%	16.7%	4.7%
Growth Mgt. Share of Actual Price Change	—	19.7%	23.0%	4.5%

Source: Analysis by authors.

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Related RPPI Studies

Urban Sprawl, Smart Growth, and Market-oriented Approaches to Growth Management. By Samuel R. Staley, Policy Brief No. 20, August 2001, www.rppi.org/pbrief20.html.

Preparing for the Storm: Preserving Water Resources with Stormwater Utilities. By Barrett P. Walker, Policy Study No. 275. January 2001, www.rppi.org/ps275.html.

The Vanishing Farmland Myth and the Smart-growth Agenda. By Samuel R. Staley, Policy Brief No. 12, January 2000, www.rppi.org/pb12.pdf.

A Line in the Land: Urban-growth Boundaries, Smart Growth, and Housing Affordability. By Samuel R. Staley, Jefferson G. Edgens, and Gerard C.S. Mildner, Policy Study No. 263. November 1999, www.rppi.org/ps263.html.

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Repairing the Ladder: Toward a New Housing Paradigm. By Howard Husock, Policy Study No. 207, July 1996, www.rppi.org/ps207.html.

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Endnotes

[1] Little consensus, however, exists on the particulars of what "Smart Growth" means. See the discussions in Anthony Downs, "Smart Growth," *Planning* (July 2001) and Samuel R. Staley, "Smart Growth, Markets and the Future of the City," *Michigan Forward* (November 2000), pp. 7–9.

[2] See Samuel R. Staley, "Markets, Smart Growth, and the Limits of Policy," in *Smarter Growth: Market-based Strategies for Land-use Planning in the 21st Century*, eds. Randall G. Holcombe and Samuel R. Staley (Westport, Connecticut: Greenwood Press, 2001), pp. 201–217.

[3] Oregon is discussed as a touchstone case, but data limitations prevented applying similar evaluative methods to it.

[4] Concurrency has been a cornerstone of local-growth control initiatives and was an important feature of early plans in cities such as Ramapo, New York, and Petaluma, California. See the discussion in William Lamont, Jr., "Subdivision Regulation and Land Conversion" in *The Practice of Local Government Planning*, eds. Frank So et al. (Washington, D.C.: International City Management Association, 1979), pp. 389–415. See also the discussion in William Fulton, *Guide to California Planning*, 2nd ed. (Point Arena, California: Solano Press Books, 1999), pp. 189–197.

[5] Phyllis Meyers, "Livability at the Ballot Box: State and Local Referenda on Parks, Conservation, and Smarter Growth, Election Day 1998," discussion paper prepared for the Brookings Institution, Center on Urban and Metropolitan Policy (Washington, DC, January 1999).

[6] Samuel R. Staley, *The Vanishing Farmland Myth and the Smart-growth Agenda*, Policy Brief No. 12 (Los Angeles: Reason Public Policy Institute, January 2000), pp. 10–12.

[7] For a discussion of the politics of this process, see Samuel R. Staley, "The Political Economy of Land Conversion on the Urban Fringe," in *Agriculture and the Environment: Searching for Greener Pastures*, eds. Terry L. Anderson and Bruce Yandle (Stanford, California: Hoover Institution Press, 2001), pp. 65–80.

[8] See www.planning.org for more updates on this initiative.

[9] *The Principles of Smart Development*, Planning Advisory Service Report No. 479 (Chicago: American Planning Association, 1998). This report is a revised version of a growth-management handbook distributed by the Transportation and Growth Management Program of the Oregon Department of Transportation and Oregon Department of Land Conservation and Development.

[10] Randall G. Holcombe, *Land-use Planning for the 21st Century* (Washington, D.C.: U.S. Joint Economic Committee, 2000), Appendix A.

[11] For a more complete discussion of how real-estate markets incorporate these costs into housing prices, see Marla Dresch and Steven M. Sheffrin, *Who Pays for Development Fees and Exactions* (San Francisco: Public Policy Institute of California, 1997) and Randall G. Holcombe, *Public Finance: Government Revenues and Expenditures in the United States Economy* (New York: West Publishing Company, 1996), pp. 206–212.

[12] Samuel R. Staley and Gerard C.S. Mildner, "The Price of Managing Growth," *Urban Land* (February 2000), p. 18.

[13] Ibid.

[14] Shimberg Center for Affordable Housing, University of Florida, *The State of Florida's Housing*, www.shimberg.ufl.edu/pdfs/Housing.pdf, August 13, 2001, p. 2.

[15] About two-thirds of the state's total number of low-income households in 1998 were considered cost-burdened using this criteria. Florida Department of Community Affairs, Affordable Housing Study Commission, *Final Report 1999*, http://www.dca.state.fl.us/fdcp/DCP/Resources/publications/AH2000ver1revised.pdf, August 10, 2001, p. 12.

[16] Ibid.

[17] Shimberg Center for Affordable Housing, *The State of Florida's Housing*, p. 4.

[18] Quoted in David Rusk, *Inside Game, Outside Game* (Washington, D.C.: The Brookings Institution Press, 1999), p. 191.

[19] Ibid.

[20] Stephen Malpezzi, Gregory H. Chun, and Richard K. Green, "New Place-to-place Housing Price Indexes for U.S. Metropolitan Areas, and Their Determinants," *Real Estate Economics*, Vol. 26, No. 2 (1993), pp. 235–274; Samuel R. Staley, Jefferson G. Edgens, and Gerard C.S. Mildner, *A Line in the Land: Urban-growth Boundaries, Smart Growth, and Housing Affordability*, Policy Study No. 263 (Los Angeles: Reason Public Policy Institute, 1999);.Wendell Cox and Ronald D. Utt, *Smart Growth, Housing Costs, and Home Ownership*, Backgrounder No. 1426 (Washington, D.C.: The Heritage Foundation, 2001). For a more detailed overview and references, see Samuel R. Staley, "Growth Controls: An Overview of Their Impacts on Housing Values," Urban Futures Program, Reason Public Policy Institute (Los Angeles: June, 1997), www. urbanfutures.org.r6897d.html.

[21] These are also referred to as the "transaction costs" associated with development. For further discussion of this relationship, see Samuel R. Staley, "Ballot-box Zoning, Transaction Costs, and Urban Growth," *Journal of the American Planning Association*, Vol. 67, No. 1 (Winter 2001), pp. 25–37; Lawrence Wai-chung Lai, *Zoning and Property Rights: A Hong Kong Case Study*, 2nd ed. (Hong Kong, China: Hong Kong University Press, 1998); Lawrence Wai-chung Lai, "Ronald Coase and Town Planning," *Planning and Development*, Vol. 8, No. 2 (1992), pp. 28–30.

[22] This is the only one of the state's 19 goals that addresses housing specifically; more than half address environmental and natural-resource issues.

[23] *Growth Management Implementation Projects*, Status Report for 2000 (Eugene, Oregon: City of Eugene).

[24] According to the NAHB, the Eugene metropolitan area ranks in the bottom 3 percent in terms of housing affordability. For the first quarter 2001, Eugene was the twelfth least affordable housing market out of 181 ranked metropolitan areas. See also the discussion in Staley, Edgens, and Mildner, *A Line in the Land*, pp. 20–21.

[25] Jerry Anthony, *The Impacts of State Growth Management Regulations on Housing Prices and Housing Affordability in Florida* (Tallahassee, Florida: Florida State University, College of Social Sciences, Department of Urban and Regional Planning, Summer 2000), p. 142.

[26] Florida Department of Community Affairs, *Growth Management Programs—A Comparison of Selected States*, www.floridagrowthorg/pdfl/states.pdf, July 31, 2000, p. 14.

[27] Florida Administrative Code, Chapter 9J-5—Housing Element, www.dca.state.fl.us/fdcp/DCP/Resources/Legislation/2001%20GM%20Rules/9j5.

[28] Anthony, *The Impacts of State Growth Management Regulations on Housing Prices and Housing Affordability in Florida*, p. 143.

[29] Florida Department of Community Affairs, *Affordable Housing Study Commission Final Report 1999* (Tallahassee, Florida: 1999), p. 11.

[30] The Sadowski Act also created the State Housing Initiatives Partnership (SHIP) program, the first permanently funded state-housing program in the nation to provide funds to counties and cities for local affordable housing programs. The SHIP program has transferred over $600 million to local governments since its inception.

[31] Washington State's GMA can be accessed through www.urbanfutures.org/state.cfm?state=Washington.

[32] For a summary of the Act's provisions, see *Growth Management Act*, 2000 Legislative Program—Issue Paper (Olympia, Washington: Washington Association of REALTORS), p. 2.

[33] Washington Center for Real Estate Research, *Growth Management in Washington State: Impact on Affordable Housing* (Executive Summary), www.cbe.wsu.edu/~wcrer/execsum.htm, July 20, 2001.

[34] Fact sheets and issue papers can be accessed via the Web at www.urbanfutures.org/state.cfm?state=Washington. See also the Web site for the Washington State Office of Community Development at www.ocd.wa.gov/index.htm.

[35] The metropolitan areas include 89.6 percent of the population of Florida, 79.7 percent of Oregon's population, and 73.0 percent of Washington's population. While not inclusive of all metropolitan areas, the data cover the vast majority of the residents living in these states.

[36] All housing-price data are from the NAR unless otherwise noted.

[37] Some may argue that the comparison of Oregon and Washington to Florida is misleading because housing costs and prices are higher on the West Coast than in the South. While housing costs are higher on the West Coast, the data do not compare base home prices; they track trends. Moreover, since West Coast housing is more costly on average, high rates of housing appreciation potentially have an even larger impact on affordability because the housing price increases are larger in absolute dollars since they start from a higher base. A 10 percent increase in a home worth $100,000 is $10,000, while a similar increase in the value of a home worth $200,000 is $20,000.

[38] U.S. Census Bureau, *Statistical Abstract of the United States: 2000* (Washington, D.C.: U.S. Department of Commerce), Tables 719, 727.

[39] Ibid, Table 768.

[40] Justin Phillips and Eban Goodstein, "Growth Management and Housing Prices: The Case of Portland, Oregon," *Contemporary Economic Policy*, Vol. 18, No. 3 (July 2000), pp. 334–344. The authors estimate that the effect of the growth boundary has been negligible, contributing (in their judgement) less than $10,000 per housing unit (or 6.4 percent). However, their statistical estimates suggest a range of impact between 10 percent to 15 percent using restrictive assumptions about planning in Portland, Oregon. Despite the size of these price effects, they were not statistically significant. While the study suffers from several significant flaws, the most important flaw is that the changes in housing prices do not reflect changes in the quality of housing (see box on page 9).

[41] Treasure Coast Regional Planning Council, *Treasure Coast Strategic Regional Policy Plan, 1998*, cited in Anthony, *The Impacts of State Growth Management Regulations on Housing Prices and Housing Affordability in Florida*, p. 15.

[42] B. Bolitzer and N.R. Netusil, "The Impact of Open Spaces o Property Values in Portland, Oregon," *Journal of Environmental Management*, vol. 59 (2000), pp. 185–193.

[43] Samuel R. Staley and Gerard C.S. Mildner, "The Price of Managing Growth," *Urban Land*, vol. 59, no. 2 (February 2000), p. 20

[44] Staley, Egens, and Mildner, *A Line in the Land*, p. 16.

[45] Ibid.

[46] Sony Conder and Karen Larson, *Residential Lot Values and the Capital-land Substitution Parameter—Some Recent Results from the Portland Metro Area* (Portland, Oregon: Growth Management Services Division, Metro, May 1998).

[47] Ivonne Audirac, Anne H. Shermyen, and Marc T. Smith, "Ideal Urban Form and Visions of the Good Life: Florida's Growth Management Dilemma," *Journal of the American Planning Association*, Vol. 54, No. 4 (Autumn 1990), pp. 470–482.

[48] For a more complete description of the HOI and its components, see the NAHB Web site at www.nahb.com. The most recent index, covering the first quarter of 2001, can be found at www.nahb.com/news/hoi.qtr1-2001.htm.

[49] This is also when the national economy picked up and Oregon emerged from a protracted economic slump that took place during the late 1980s and early 1990s. See Staley and Mildner, "The Price of Managing Growth," p. 16.

[50] Calculated by authors using historical U.S. Census Bureau state population data, www.census.gov/population/censusdata/table-16.pdf, June 20, 2001.

[51] Perkins Coie, LLP, The Environment Group, *The Washington Growth Management Act After Ten Years: The Duty to Accommodate Growth*, April 30, 2001, pp. 1–2.

[52] American Planning Association (APA), "Growing Smart[SM] Statutory Planning Summary for the State of Washington" (May 1996 update), www.planning.org/plnginfo/growsmar/summry/washing.pdf, June 19, 2001, pp. 9–10.

[53] For more discussion on this, see Jefferson G. Edgens, "National Land-use Planning Through Environmental Policy," in *Smarter Growth*, eds. Holcombe and Staley, pp. 95–112.

[54] APA, "Growing Smart[SM] Statutory Planning Summary for the State of Washington," p. 4.

[55] Voluntary planning is not unique to Washington State. New Jersey began implementing voluntary statewide planning in 1992, although only 11 percent of the state's local governments participate. Other states, such as South Carolina, have passed laws requiring local planning, but have not tied planning to statewide goals. See Samuel R. Staley, *The Sprawling of America: In Defense of the Dynamic City*, Policy Study No. 251 (Los Angeles: Reason Public Policy Institute, 1999), pp. 40–41.

[56] Ibid.

[57] Puget Sound Regional Council (PSRC), Forecasting and Growth Strategy Department, *The Washington State Growth Management Act with Applications for the Central Puget Sound Region* (Seattle, Washington: September 1998), p. 1.

[58] APA, "Growing Smart[SM] Statutory Planning Summary for the State of Washington," p. 4. While counties that voluntarily opt in to the GMA's planning process must undertake the same activities, they are exempt from designating and adopting regulations conserving critical areas. Their comprehensive plans, however, must be adopted within four years of passing a resolution indicating their intent to conform to GMA.

[59] Revised Code of Washington (RCW) 36.70A.020; RCW 36.70A.480.

[60] Perkins Coie, *The Washington Growth Management Act After Ten Years*, p. 5.

[61] Ibid., p. 20.

[62] PSRC, *The Washington State Growth Management Act with Applications for the Central Puget Sound Region*, p. 1.

[63] This is similar to the "Tiebout Effect" discussed in urban and regional economics. See John P. Blair, *Local Economic Development: Analysis and Practice* (Thousand Oaks, California: Sage Publications, 1995), pp. 251–254.

[64] See the discussions in Staley, Edgens, and Mildner, *A Line in the Land*, and in Phillips and Goodstein, "Growth Management and Housing Prices."

[65] Perkins Coie, *The Washington Growth Management Act After Ten Years*, pp. 6–7.

[66] See the discussions in WAR, *Urban Growth Areas*, 2000 Legislative Program—Issue Paper , Olympia, Washington and the Washington Office of Community Development Web site, www.ocd.wa.gov/info/lgd/growth/fact_sheets/Urban_Growth_Areas.htm, June 19, 2001.

[67] WAR, *Urban Growth Areas*.

[68] Perkins Coie, *The Washington Growth Management Act After Ten Years*, p. 7; PSRC, *The Washington State Growth Management Act with Applications for the Central Puget Sound Region*, p. 1.

[69] Washington's growth-management laws were amended in 1997 to impose additional review requirements for six large counties (Clark, King, Kitsap, Pierce, Snohomish and Thurston) as part of the Buildable Lands Program. This program requires review and evaluation of comprehensive plans, CPPs, and UGAs in five-year intervals (beginning in 2002), with a focus on the level and type of urban densities achieved and the supply of buildable land. See the discussion in Perkins Coie, *The Washington Growth Management Act After Ten Years*, p. 7. This information will be compared with projected density levels and land supply as detailed in county and local plans. If inconsistencies are discovered, the program requires revisions during the next five-year period using techniques other than the adjustment of UGA boundaries. See www.ocd.wa.gov/info/lgd/growth/fact_sheets/Urban_Growth_Areas.htm, June 19, 2001.

[70] Staley, Edgens, and Mildner, *A Line in the Land*, pp. 19–23.

[71] See the discussion in Gerrit J. Knaap and Lewis D. Hopkins, "The Inventory Approach to Urban Growth Boundaries," *Journal of the American Planning Association*, Vol. 67, No. 3 (Summer 2001), pp. 314–326.

[72] PSRC, *The Washington State Growth Management Act with Applications for the Central Puget Sound Region*, p. 1. Additionally, counties must develop a rural element and designate UGAs.

[73] APA, "Growing Smart[SM] Statutory Planning Summary for the State of Washington," p. 5.

[74] PSRC, *The Washington State Growth Management Act with Applications for the Central Puget Sound Region*, p. 1; Perkins Coie, *The Washington Growth Management Act After Ten Years*, p. 9.

[75] Perkins Coie, *The Washington Growth Management Act After Ten Years*, p. 9.

[76] Staley, "Ballot-box Zoning, Transaction Costs, and Urban Growth," pp. 25–37. See also Lawrence W. Lai, "Property Rights Justifications for Planning and a Theory of Zoning," in *Progress in Planning: Recent Research on Urban and Regional Planning*, eds. D. Diamond and B.H. Massam, (Oxford, England: Pergamon Press, 1997), pp. 161–246.

[77] Alan Alschuler, Jose Gomez-Ibanez, and A.M. Howitt, *Regulating for Revenue: The Political Economy of Land use Exactions* (Washington, D.C.: Brookings Institution and Lincoln Institute for Land Policy, 1993).

[78] Gerrit Knaap, "The Price Effects of Urban-growth Boundaries in Metropolitan Portland, Oregon," *Land Economics* Vol. 61 (1987), pp. 92–97.

[79] WAR, *Urban Growth Areas*, p. 2.

[80] Perkins Coie, *The Washington Growth Management Act After Ten Years*, p. 15.

[81] Ibid.

[82] APA, "Growing Smart[SM] Statutory Planning Summary for the State of Washington," p. 13.

[83] Perkins Coie, *The Washington Growth Management Act After Ten Years*, p. 15.

[84] If a jurisdiction is found to be in non-compliance with GMA and corrective action is not forthcoming, a GMHB will transmit that finding to the governor and can recommend sanctions. The governor may order sanctions against the non-compliant jurisdiction, including the loss of the revenue sources, grants, or loans.

[85] The Washington State Office of Community Development, a division of CTED, assists local jurisdictions with GMA implementation by providing technical and financial assistance for developing comprehensive plans and development regulations. Other state agencies also offer technical assistance to the local planning process.

[86] Perkins Coie, *The Washington Growth Management Act After Ten Years*, p. 19.

[87] WAR, *Urban Growth Areas*, p. 3.

[88] Perkins Coie, *The Washington Growth Management Act After Ten Years*, p. 19.

[89] Ibid.

[90] Ibid.

[91] Correspondence with GIS Coordinator, Washington State Office of Community Development, June 6, 2001.

[92] Washington Center for Real Estate Research, *Urban Growth Areas and Lot Prices: Clark County, Washington* (Pullman, Washington: Washington State University, April 1997).

[93] Ibid.

[94] Estimates from Washington Center for Real Estate Research, Washington State University, www.cbe.wsu.edu/~wcrer.

[95] This is the significance of the R^2, also called the coefficient of determination, which is a statistical measure used to determine how much of the change in one variable can be explained by the change in a second variable.

[96] Numerous factors influence the demand for housing and, ultimately, its price—including the quality of homes, income, household size, and local market conditions. Complete data were available only for a limited number of variables. Housing-price data from a consistent source were available from 1995 to 2000, so an assessment of housing-price trends over a longer period is problematic until data from the 2000 census are available. The primary effects of Washington's growth-management laws are expected to occur in the aftermath of the implementation of the GMA, however, so that period should reflect the most significant impact on housing prices.

[97] The model estimates that the effect over five years is 3.5 percentage points. See Table A4 in Appendix A.

[98] John P. Blair, *Urban and Regional Economics* (Homewood, Illinois: Richard D. Irwin, 1991), p. 427.

[99] Note that 1.0 is not an optimal standard and, unlike the NAHB index, does not represent the share of residents that can afford a home. In addition, the index does not capture changes in housing quality. Ideally, public policy should focus on maximizing the total index number so that, at some point, any family that wanted to own a home would have that option. This could mean an index of two or higher.

[100] Note that these results are statewide. The impact could be much larger for individual cities and metropolitan areas such as Seattle. See Appendix A.

[101] Calculated by authors using historical U.S. Census Bureau data of the state population, www.census.gov/population/censusdata/table-16.pdf, June 20, 2001.

[102] Florida Department of Community Affairs (DCA), *Growth Management Program—A Comparison of Selected States*, www.floridagrowth.org/pdf/states.pdf, July 31, 2000, p. 7.

[103] APA, "Growing Smart[SM] Statutory Planning Summary for the State of Florida," p. 2.

[104] Ibid, p. 2; Florida DCA, *Growth Management Programs*, p. 8.

[105] Florida DCA, *Growth Management Programs*, p. 8.

[106] Ibid.

[107] See the discussion in John M. DeGrove and Patricia M. Metzger, "Growth Management and the Integrated Roles of State, Regional, and Local Government," in *Growth Management: The Planning Challenge of the 1990s*, ed. Jay M. Stein (Newbury Park, California: Sage Publications, 1993), pp. 3–17.

[108] Florida DCA, *Growth Management Programs—A Comparison of Selected States*, p. 7.

[109] APA, "Growing Smart[SM] Statutory Planning Summary for the State of Florida" (May 1996 update), www.planning.org/plnginfo/growsmar/summary/fla.pdf, June 20, 2001, p.1.

[110] Florida DCA, *Growth Management Programs*, p. 7.

[111] The exceptions include a few newly formed city governments.

[112] The Florida DCA determined that 211 of the comprehensive plans submitted by cities were not in compliance with the GMA of 1985. Data from the Florida DCA, Division of Community Planning, as of August 2001.

[113] Holcombe, "Growth Management in Action: The Case of Florida," in *Smarter Growth*, eds. Holcombe and Staley, pp. 131–154.

[114] Florida DCA, Division of Community Development. Among the state's 67 counties, only 10 were in compliance. On average, counties took almost two years to bring their plans into compliance with DCA requirements.

[115] Florida DCA, *Growth Management Programs*, p.10.

[116] The other plan elements are: Capital Improvements, Future Land Use, Traffic Circulation, Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Aquifer Recharge, Conservation, Recreation, Housing, Intergovernmental Coordination, and Coastal Management (required for local governments within the state coastal zone). See APA, "Growing Smart[SM] Statutory Planning Summary for the State of Florida," p. 6.

[117] See Randall G. Holcombe, "Distributional Aspects of Florida's Concurrency Requirement," *Florida Policy Review* 5 (Winter 1990), pp. 8–14.

[118] Florida DCA, *Growth Management Program*, p. 13.

[119] APA, "Growing Smart[SM] Statutory Planning Summary for the State of Florida," p. 7.

[120] Holcombe, "Growth Management in Action," p. 136.

[121] Ibid.

[122] Florida DCA, *Growth Management Programs*, p. 14.

[123] Audirac, Shermyen, and Smith, "Ideal Urban Form and Visions of the Good Life," pp. 470–482.

[124] Florida DCA, *Growth Management Programs*, p. 14.

[125] Shimberg Center for Affordable Housing, University of Florida, *The State of Florida's Housing*, www.shimberg.ufl.edu/pdfs/Housing.pdf, August 13, 2001, p. 1.

[126] Median-income data are estimates provided by the U.S. Census Bureau. The results of the 2000 census were not available as this study went to press.

[127] U.S. Census Bureau estimates.

[128] Florida DCA, *Florida Fair Housing Summary Report* (Tallahassee, Florida: 1999), p. 4. Cited in Anthony, *The Impacts of State Growth Management Regulations on Housing Prices and Housing Affordability in Florida*, p. 66.

[129] The 20 metropolitan areas include 33 counties. Seven metropolitan areas have multiple counties: Jacksonville, Fort Pierce-St. Lucie, Orlando, Pensacola, Sarasota, Tallahassee, and Tampa.

[130] The Pearson correlation coefficient, a statistical measure showing the strength of the statistical relationship between two variables, is 0.3804. This suggests a significant, positive link between housing prices and planning under Florida's GMA. Perfect correlation—housing prices that exactly match the number of years a county has been planning under the GMA—would result in a coefficient of 1.00. If no relationship existed, the coefficient would be 0.00. The correlation coefficient suggests that relationship is statistically significant.

[131] Anthony, *The Impacts of State Growth Management Regulations on Housing Prices and Housing Affordability in Florida*.

[132] Charles Connerly and Nancy Muller, "Evaluating the Housing Element in Comprehensive Plans," in *Growth Management—The Planning Challenge of the 90s*, ed. Jay Stein (Newbury Park, California: Sage Publications, 1993).

[133] Florida DCA, Affordable Housing Study Commission, *Affordable Housing Study Commission Final Report 1999*, p. 36.

[134] Ibid.

[135] Ibid.

[136] Anthony, *The Impacts of State Growth Management Regulations on Housing Prices and Housing Affordability in Florida*, p. 156.

[137] In addition to these variables, housing unit growth was also calculated in each county, but the results were not statistically significant and the variable was dropped. The researchers also attempted to gather information on housing quality, including average home and lot size, but these data were not available for all counties in the state.

[138] Interestingly, population growth is consistent in just one model, and the relationship is negative. This result, while contrary to anticipated impact, may be explained by the relatively lower population growth rates of large urban counties that are adding more people to an already large population base—they will have lower population growth rates because they start from a larger population base. Thus, King County, home to Seattle, added 83,171 people over a five-year period—more than any other county—but its growth rate was just 5.5 percent. Snohomish County, another county in the Seattle metropolitan area, added 49,731 new residents, but its growth rate was 9.3 percent. Pierce County, another urban county, added 74,349 people to its population; its growth rate was 11.5 percent. The counties with the highest growth rates were rural: San Juan (17.1 percent), Jefferson (15.5 percent), Chelan (14.6 percent), and Grant (13.8 percent).

[139] An analysis of the planning variables, using correlation coefficients, found the planning variables highly correlated with each other.

[140] The effects of the GMA account for all of the net change in housing prices estimated by the model. While the difference between actual housing price increases and estimated increases from the GLS regression models are significantly different, they are well within one standard deviation of the mean.

[141] Author correspondence with staff of the Community Planning Division of the Florida DCA, August 2001.

[142] Housing-price data for Ocala County were not available for 2000.

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