Urban-growth Boundaries and Housing Affordability: Lessons from Portland

by Samuel R. Staley and Garard C.S. Mildher

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Executive Summary

rban-growth boundaries are emerging as one of the most popular growth-management tools in the fight against suburbanization. More than 100 cities and counties have adopted them, and statewide mandates for growth boundaries exist in Oregon, Washington, and Tennessee.

Urban-growth boundaries, however, have potentially large, if unintended, negative impacts on housing. The burden of these impacts will most likely be felt by low-, moderate-, and middle-income households since their housing choices will be the most severely constrained.

An examination of housing-production trends and home prices in Napa County, California found that:

- Housing production fell by 74.2 percent when strict growth controls in Napa County, California were implemented, creating an effective countywide urbangrowth boundary; and
- Housing prices soared in rural parts of the county as demand outstripped supply, increasing the price "premium" for rural housing from 16.3 percent in 1985 to 84.8 percent over the county average in 1997.

Similar impacts were found in Portland, Oregon where a regional-growth boundary hems in 24 cities and three counties. A review of research and housing data found:

- Portland now ranks among the 10 percent least affordable housing markets in the nation:
- The average housing density has increased from five homes per acre to eight homes per acre while multifamily housing units makeup about half of all new building permits;
- Even with these increases in density, the Portland area is expected to have a housing deficit of almost 9,000 housing units by 2040;

- High rates of infill and redevelopment were associated with low overall levels of housing production; and
- More than 80,000 single-family homes became "unaffordable" to Portland residents as a result of housing-price inflation.

Several lessons were gleaned from Napa County and Portland's experience with growth boundaries:

- Growth boundaries contribute to higher housing costs, although the magnitude is uncertain. Metro, Portland's regional-planning agency, could alleviate housing costs by releasing more low-cost vacant land for development but chooses not to;
- Growth boundaries encourage consumers to buy larger homes with fewer openspace amenities such as private yards;
- Growth boundaries create new specialinterest groups that will oppose growthboundary expansion, including high-income hobby farmers who want to protect their rural lifestyle;
- Recalls of local officials and the defeat of new funding for the regional-rail system suggests that public support for urbangrowth boundaries in Portland may be weakening; and
- Higher housing prices are contributing to concerns by low- and moderate-income households that the growth boundary works against their interests, weakening overall support for regional-growth management.

Urban-growth Boundaries

Growth management has risen to the fore front of public debate in the United States. Both Vice President Al Gore and President Bill Clinton are promoting a "Livability Agenda" for cities and encouraging so-called

"Smart Growth" initiatives to limit suburbanization and revitalize central cities.

On the local level, one of the most popular Smart Growth tools is the urban-growth boundary, a politically designated line around cities beyond which development is either prohibited or highly discouraged. Growth boundaries, also called urban-limit lines or rural-limit lines, exist in more than 100 cities, counties, and regions across the nation. California, in particular, has emerged as one of the most prolific centers for this approach to growth control.

While popular, the full consequences of adopting these growth controls have not been fully explored. While many are geared toward curbing suburban development in outlying rural areas, growth boundaries can have unintended economic and social consequences. By restricting land availability for new housing, growth boundaries could increase the price of land and, ultimately, housing. As affordable housing disappears, economically vulnerable low- to moderate-income households suffer the most. Even middle-income families may be at risk based on emerging evidence from Portland, Oregon and California.

Thus, growth boundaries may be a poor growth-management strategy, especially in areas concerned about housing affordability. Impacts such as the density versus affordability trade off are rarely discussed adequately in the heat of local growth-management debates.

California and the Burgeoning Growthboundary Movement

Ground zero in the growing support for growth boundaries may be California. In some states (e.g., Oregon, Washington, and Tennessee), growth boundaries were mandated by a distant state legislature. Urbangrowth boundaries in California are the product of local efforts. As a result, California's

growth boundaries are not uniform and the data on their impacts are mixed. Public support for growth boundaries, however, continues to grow across the state, where 80 percent of the local initiatives with growth boundaries on the ballot passed in November 1998. Frustration with lost open space, traffic congestion, and overcrowded schools led more than 20 counties and 50 cities to adopt urbanlimit lines or green belts in the 1970s and 1980s.² In the 1990s, growth-boundary activity increased and proliferated.

Some California cities and counties are even shrinking their boundaries.³ A movement is afoot in Contra Costa County, just across the bay from San Francisco, to reduce its growth boundary and thwart development plans despite a projected deficit of 45,000 homes.⁴ The City of Cotati in Sonoma County (north of San Francisco) reduced the amount of developed and developable land inside its boundary by almost one-third.⁵

More telling may be the attempts by slow-growth advocates to convert urban-service areas—boundaries beyond which public infrastructure services such as roads, sewers, and water will not be extended—into growth boundaries. Sacramento County is a case in point. Antigrowth interest groups are transforming the county's urban-service area into an urban-growth boundary by lobbying against approval for development projects outside the service area.⁶

The most troubling characteristics of urbangrowth boundaries, however, may be the inequities they create between existing homeowners and low- and moderate-income families.

The City of Napa in northern California is an example. Just north of San Francisco, Napa adopted a limit line in 1975 in an attempt to cap the city's population at 75,000. Residential development was still allowed in rural areas, providing a relief valve for the residential-housing market. Then, in the early 1990s,

the county clamped down on new development. Residential-building permits plummeted by 74.2 percent from 1989 to 1996 as a moratorium on residential permits took effect in the county and a regional-housing recession took hold in the early 1990s. As the recession gave way to the current economic boom, building permits increased, but not as quickly as in other parts of the Bay Area without growth boundaries. Well after the end of the recession, building permits remain at half the levels that existed before the county growth controls were instituted.

An affordability wedge between rural and urban residents is also emerging in Napa County. As the growth controls took hold, the average value of a single-family home in unincorporated areas of Napa County climbed 158.1 percent to over \$373,000 from 1985 to 1997.9 The average value of a new single-family home in the City of Napa increased by less than half the rate in rural areas (66.8 percent), but the rate of increase doubled after the county growth controls created an effective regional-growth boundary.10 Nevertheless, the housing-price "premium" for homes outside the more densely urbanized areas grew from 16.3 percent to 84.8 percent over the Napa County average.

Thus, growth boundaries potentially serve up a double whammy for homebuyers. First, reducing land supplies through growth controls drives up housing prices. Then slow-growth policies outside cities create an open-space preserve that can be tapped only by high-income households.

Although the data for California and Napa County are not definitive, they clearly suggest urban-growth boundaries can have the unintended impact of reducing the supply of housing. Moreover, the use of urban-growth boundaries also suggests local growth controls pass the responsibility for accommodating future housing demand and growth onto other communities. In the case of Napa County, the boundary by the county's largest city (Napa), coupled

with an apparent unwillingness of other cities in the county to annex territory and provide for future growth, has had the effect of increasing housing costs and limiting the availability of housing for working families.

The case of Portland, Oregon, on the other hand, provides an example of a pure urban-growth boundary that has been in place on a regional level over a longer period of time. Portland's experience should provide more direct lessons about the relationship between urban-growth boundaries and housing affordability.

The Portland Case

The State of Oregon implemented one of the nation's most comprehensive state-planning laws in the early 1970s. In Portland, a regional boundary has hemmed in 24 cities and three counties for 20 years and has become the linchpin to regional urban planning. Portland uses its growth boundary explicitly to increase housing density and redirect investment into inner cities. Thus, the Portland effort provides an excellent opportunity to examine the intended and unintended consequences of adopting growth boundaries.

While originally intended as a dynamic tool for addressing the needs of a city's population, the growth boundary in Portland has made planning for the needs of a growing population far more complex. To more fully appreciate the relationship between growth boundaries, housing prices, and housing choice, the following sections review the effects of growth boundaries in Portland, Oregon on:

- Housing cost and prices;
- Housing density;¹¹
- Developable land and infill; and
- Consumer choice in the housing market.

The effects of growth boundaries on housing prices and consumer choice may create a po-

litical environment that may be difficult to sustain and further compound the negative, if unintended, consequences of imposing a growth boundary.

A. Housing Costs in Portland and Oregon

Since the passage of Oregon's growth-management laws, the cost of housing in urban areas has increased significantly. Oregon's housing markets now rank among the nation's least affordable in the nation and on the West Coast (see Table 1). ¹² Eugene holds the dubious distinction of being the least affordable Oregon housing market, ranking among the bottom 3 percent in housing affordability nationwide, according to the National Association of Home Builders. Not far behind are Portland and Medford, both ranking among the bottom 10 percent.

Another policy goal of planning in Portland and the rest of the state is to meet the housing needs of low- and moderate-income families. Housing-price trends have important implications for affordability. One local real-estate consultant estimates that, from the second quarter 1995 through second quarter 1997, housing-price appreciation alone pushed 80,000 single-family homes over thresholds of affordability. In other words, 80,000 fewer units were considered "affordable" in 1997 compared to 1995. Meanwhile, from 1990 to 1997, just 6,450 single-family homes and 3,530 multifamily units were approved.

Because the relationship between housing prices and land supply is complex, simple explanations for Portland's extraordinary housing-price increases are elusive. Metro has claimed that land supply is largely irrelevant for understanding Portland's recent housing-price surge, arguing that increased population growth is the primary factor influencing home prices.¹⁵

Housing prices in Portland, however, are not increasing in a neutral real-estate market: the amount and quality of vacant land has been

HOUSING AFFORDABILITY FOR OREGON METROPOLITAN AREAS: FOURTH QUARTER 1998

| City/MSA | Affordability Index | National Rank* | Percenile Rank | Regional Rank** | Percentile Rank |
|--------------------|------------------------|-------------------|-------------------|--------------------|--------------------|
| Eugene-Springfield | 30.4 | 185 | 99.5% | 47 | 97.9% |
| Medford-Ashland | 38.5 | 182 | 97.8% | 45 | 93.8% |
| Portland-Vancouver | 38.7 | 180 | 96.8% | 43 | 89.6% |
| Salem | 44.8 | 173 | 93.0% | 37 | 77.1% |

^{*}Nation (N=186) **Western States (N=48)

Source: National Association of Home Builders, http://www.nahb.com.The affordability index is the NAHB's "Housing Opportunity Index" (HOI) score and represents the share of new and existing homes that could be purchased by a family earning the metropolitan area's median-family income. Thus, lower HOI scores represent less affordable areas since the median family could afford to purchase a lower percentage of homes sold in the regional market. Therefore, lower rankings represent less affordable areas.

falling for 20 years as a direct result of the urban-growth boundary. As land becomes more scarce inside the boundary, the increased *competition* for developable land inside the growth boundary appears to be contributing to higher land prices.¹⁶

These effects are evident in the Portland area's largest suburban county. Washington County is the second-largest county in the metropolitan area, but has the largest amount of newhome construction and the best data in the region on housing-lot prices. Lot prices for single-family houses in Washington County lagged inflation, as measured by the Consumer Price Index (CPI) from 1985 to 1990, the years the Portland area experienced a housing recession (Figure 1).17 After 1990, housing prices increased significantly. By 1994, home prices were one and one-half times greater than in 1985 (a 140 percent increase). Lot prices more than doubled in five years while the CPI increased by 52.5 percent.18 These trends significantly surpassed Metro's housing-price forecast, which predicted land prices would rise by 20 percent in real terms from 1995 to 2000.19

A glimpse of the growth boundary's potential impacts on land prices became evident early.²⁰ In 1980, just one year after Portland's regional-growth boundary was established, an analysis of 455 purchases of vacant lots for single-family homes found that land prices inside the boundary were significantly higher than those outside the boundary.²¹ The changes in market price were tied to expectations by builders and developers about the likelihood the land could be developed for residential purposes.

Land prices varied by how much local governments restricted development and developers believed those restrictions were binding.²² Rural-land values outside the boundary fell as developers recognized its availability for urban development was limited. Land values inside the boundary increased as developers recognized its potential for development

and more people were competing for the same parcel of land. Thus, strict regulatory adherence to the growth boundary resulted in the largest differences in price. As Metro has become even stricter in its adherence to minimum-density targets, land prices are likely to increase even further.

B. Housing Density

Another important goal of growth boundaries is increasing housing density within existing urban areas. Despite a national reputation as a growth-management success story, Oregon's planning system fell sufficiently short of this goal that many planners and policymakers argued for "mid-course corrections" as early as the mid-1980s.²³ Actual densities inside the growth boundaries, for example, ranged from two-thirds to one-fourth below the levels permitted by local plans.²⁴ Although Portland had the highest-allowable densities, actual densities were one-third lower than those allowed by local land-use plans.²⁵

Portland nevertheless increased housing densities by putting more people on less land even though they were below planners' targets. Densities for new development increased on average from five homes per acre (one-fifth of an acre per home) to eight homes per acre (one-eighth of an acre per home) from 1994 to 1997.²⁶ The amount of land used for new housing development has declined as multifamily housing units have increased from 25 percent of all building permits in 1992 to 49 percent in 1997.²⁷

Even these density increases fall below the levels needed to meet Metro's (the regional planning agency) projected population increase. At current trends, without an expansion of the boundary, the Portland metropolitan area will experience a 42,060 housing-unit deficit by the year 2017.²⁸ If densities increase to achieve those recommended in the Metro 2040 Plan, the housing deficit would still be 8,590 units.

This creates a problem for local planners: if densities are too low (and more land is used per household), the urban-growth boundary will have to be expanded sooner than they predicted. In order to increase densities further and avoid expanding the growth boundary, Metro has recently implemented a mandate for a minimum density of more than six units per net acre (which is creating new economic and political problems and trade offs).²⁹

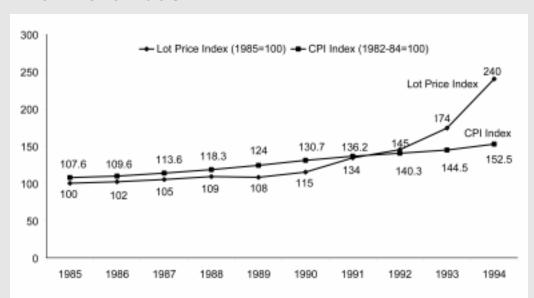
C. Developable Land and Infill

In order to achieve higher densities within the urban-growth boundary, Metro and Portland planners are relying on "refill." Refill consists of two elements: developing vacant land (infill) inside the growth boundary and redeveloping existing property more intensely at higher den-

sities. An examination of the Portland model reveals another unintended effect of growth boundaries: the reliance on infill development contributes to higher housing costs and impacts the availability of affordable housing.

As Metro pushes for more infill development, vacant land within the growth boundary is disappearing. Vacant land inside the boundary has fallen from 75,000 acres in 1985 to less than 55,000 today. Once environmentally sensitive and otherwise undevelopable land is considered, the amount falls to less than 38,000 acres.³⁰ While almost 40 percent of the land in the boundary was vacant in 1980, the share of total vacant land represented just 19.8 percent of the land by 1997, less than 14 percent when undevelopable land is considered.³¹

CHANGE IN RESIDENTIAL LOT PRICES VS. INFLATION IN WASHINGTON COUNTY



Source: Washington County Tax Assessor.

Metro estimates Portland's current refill rate at 25.4 percent.32 In other words, about onefourth of all housing units built inside the growth boundary are either infill or redevelopment of existing property. Metro, however, also found that the rate of residential redevelopment and infill was negatively related to the total housing built when the data were broken down by neighborhood.²³ High refill rates, it turns out, require higher home prices to justify the development of smaller and relatively more-expensive parcels of land.34 In addition, if homebuyers cannot trade off home size for larger lots, they may invest in building bigger and more expansive homes. Thus, Portland was achieving a higher rate of infill and redevelopment because land and housing prices were increasing.

Inner-city Portland appeared to benefit from these higher rates of redevelopment. From 1990 to 1995, inner-city neighborhoods in Portland experienced a substantial increase in home-price inflation: the North, Southeast, and Northeast areas of the City of Portland saw their housing prices increase the fastest (Table 2). Home prices in North Portland doubled, rising from \$41,300 in 1990 to \$83,800 in 1995 (in noninflation adjusted dollars). The average home price among these cities increased from \$97,684 to \$152,700.

For those favoring growth boundaries, these trends suggest success. Higher refill rates and rebounding home prices in inner-city neighborhoods should mean the goals of revitalization and increasing density are being met.

These observers, however, may be ignoring the trade offs implicit in these trends. Higher housing prices are a double-edged sword. On the one hand, housing demand is pushed inward as land becomes more scarce on the fringe. Higher land prices create incentives for higher-density development in existing suburbs and inner-city neighborhoods. ³⁵ As suburban neighborhoods achieve higher densities and become less distinguishable from inner-city neighborhoods, higher-income

households look at inner city and suburban locations more competitively.

Higher-housing prices, on the other hand, may also reflect a supply constraint. With the imposition of an effective growth boundary, consumers have fewer housing choices than under a freely functioning land market since developers are more limited in the kinds of homes they can provide. Rural and semi-rural settings for homes and communities will be reduced for all except the wealthiest families and longtime residents. In this case, higher-housing prices reduce the overall quality of life for residents, since they must pay more for a home that provides potentially fewer benefits (e.g., smaller lots and denser living). Many households are buying what is available in a restrictive housing environment as new homes on lots larger than one-fifth of an acre are prohibited. Higher refill rates come at a cost: higher housing prices, less affordable housing, and less private open space in the form of yards.

D. Consumer Behavior

Land, as the previous section discussed, is an important beneficial characteristic of a home. Sometimes this land is privately owned (e.g., back and front yards), and sometimes it is public open space (e.g., a neighborhood park). Not surprisingly, when land is abundant, people prefer homes with larger lots. As housing prices increase, homebuyers recalculate the benefits of different housing characteristics. Since houses usually provide important, high-priority benefits—bedrooms for personal privacy, shelter from the elements, kitchens, etc.homebuyers will often choose smaller lots when home prices are high. Thus, growth boundaries influence the housing decisions by families and other households as well.

Portland, Oregon provides an interesting application of this housing "substitution" effect. When Metro began implementing its land-use plan in the early 1990s, developers were allowed to build more houses on each acre of land as maximum densities allowed by local

zoning codes increased. By the mid-1990s, the effects on the local real-estate market were becoming apparent. Researchers at Metro examined almost 8,000 home sales from January 1996 through June 1997 to determine how households responded to higher housing prices and whether a lot size/building size tradeoff existed.36 Portland-area homebuyers, it turned out, did not buy larger lots as home prices increased for houses of the same size.37 As home prices increased, homebuyers bought larger homes on smaller lots. For homes in different sizes categories (large vs. small), researchers also found that consumers traded off lot size for home size.38 Of course, these trade offs were made in an artificially constrained and manipulated market. The growth boundary is a politically designated barrier, not one chosen by consumers trading in an open market.

The Politics of Growthboundary Expansion

etro claims that the urban-growth boundary is not intended to prevent housing development. Rather, the goal is to manage growth. The boundary was originally expected to be a dynamic, growth-management tool: as land became more scarce, local officials and planners would expand the boundary to accommodate more growth.

Portland politics is making expansion of the growth boundary difficult. In 1997, Metro's executive officer recommended a 7,000-acre expansion of the growth boundary to accommodate new growth.³⁹ The Metro Council voted down the recommendation five votes to two. Metro eventually expanded the boundary by 5,300 acres in 1998,⁴⁰ but the expansion rep-

HOUSING PRICES BY PORTLAND SUB-MARKET, 1982-95

| | | Prices | Appreciation Rate | | | |
|------------------------|------------|-----------|-------------------|---------|---------|--|
| | Type | 1995 | 1982-85 | 1985-90 | 1990-95 | |
| Lake Oswego/West Linn | suburb | \$244,400 | -0.25% | 54.55% | 33.12% | |
| West Portland | inner city | \$210,200 | -2.27% | 51.11% | 46.58% | |
| NW Portland | inner city | \$195,900 | 0.50% | 44.78% | 35.85% | |
| Tigard/Wilsonville | suburb | \$174,900 | -9.86% | 61.65% | 39.25% | |
| Milwaukie/Gladstone | suburb | \$144,800 | -4.79% | 43.29% | 54.04% | |
| Oregon City/Mollala | suburb | \$144,500 | 10.60% | 37.87% | 62.00% | |
| Beaverton/Aloha | suburb | \$141,700 | -3.05% | 44.52% | 34.31% | |
| Hillsboro/Forest Grove | suburb | \$134,500 | -6.62% | 34.05% | 54.60% | |
| Gresham/Troutdale | suburb | \$132,900 | -5.97% | 34.49% | 49.49% | |
| NE Portland | inner city | \$114,500 | -9.15% | 24.42% | 78.35% | |
| SE Portland | inner city | \$109,700 | -8.83% | 22.06% | 85.30% | |
| N. Portland | inner city | \$83,800 | -17.48% | 16.67% | 102.91% | |
| Unweighted Averages | _ | \$152,700 | -4.76% | 39.12% | 56.32% | |

Source: Gerard C.S. Mildner, "Growth Management in the Portland Region and the Housing Boom of the 1990s," *Urban Futures Working Paper No. 98-1*, Reason Public Policy Institute, May 1998, http://www.urbanfutures.org.

resents about two years of the average land take-up through development.41 More significantly, the expansion was a compromise between environmental activists, zero-expansion advocates, and prodevelopment groups. Even while local planners may favor a more dynamic approach to land supply within the growth boundary, regional politics may prevent its timely expansion. A close examination of the Portland case reveals that, once implemented, growth boundaries make planning decisions more difficult and political. As a result, responding to increased housing demand and population growth becomes a function of local and regional political forces, rather than land-use planning.

Local politics is making growth-boundary expansion difficult in part because the planning process itself is creating new winners and losers.

A. Low-income Households

Low-income households, for instance, were once considered big winners from statewide planning. Oregon's planning law included a plank supporting the housing needs of all residents in the state, and many believed a properly planned region would yield affordable housing. Strong demand for inner-city housing, however, has pushed up prices in innercity Portland neighborhoods faster than in suburban communities, displacing some lowand moderate-income families.

Low-income housing strategies such as inclusionary zoning are unlikely to significantly improve affordable housing. Portland has considered an inclusionary-zoning program that would require developers to provide affordable housing. If the plan had been enacted during the 1990s, "affordable" homes and apartments would have represented just two percent of the units that "disappeared" as a result of escalating housing prices. Programs such as the one considered by Metro would make little headway in improving affordability in the Portland metropolitan area.

B. "Hobby" Farmers

The growth boundary has had another unintended side effect. A new interest group consisting of noncommercial farmers, sometimes called "hobby farmers," has emerged that is highly resistant to expansions of the growth boundary. Many of these households appear to be circumventing Metro's restrictive landuse policies by buying properties outside the growth boundary and calling them farms. Ninety percent of the farms under 160 acres where new homes were authorized in the 1980s reported no farm receipts.44 Half of the farm operations with new homes were in the Willamette Valley, which contains the City of Portland and about 60 percent of Oregon's residents.45 By planting a field of Christmas trees or a large patch of strawberries, these landowners have been able to get rural homebuilding permits under the exemption for farmers. Ironically, by building their homes on large rural parcels, these hobby farmers are creating the exurban sprawl that many of growth-boundary advocates wish to avoid. Hobby farmers are hostile to boundary expansions because higher-residential densities and development of nearby open space would diminish their quality of life.

Lessons from Portland

Several events suggest that grassroots opposition to regional planning is emerging as an important political force. Metro is experiencing significant resistance to higher-density residential development and the proposed transportation plan by grassroots groups. For example:

- A regionwide referendum to fund the region's light-rail extension was rejected in November 1998; and
- Residents of the suburban community of Milwaukie, Oregon recalled all city council members that voted to accept Metro's high-density zoning mandate to accommodate future population growth.

Growth management in the Portland region is becoming less stable politically as new interest groups and coalitions emerge to support specific aspects of the regional plan. As land inside the growth boundary becomes increasingly scarce, housing prices have increased significantly. Portland still retains many of the characteristics of suburban living that the growth boundary was intended to discourage. Ironically, achieving density targets may only be possible through high housing prices that make expensive and inefficient parcels of land profitable to develop through the private sector.

While some believe a substantial amount of land still exists within the urban-growth boundary for land development, Metro is predicting a housing deficit even if significantly higher densities are achieved on current land. In fact, the remaining land inside the boundary is generally less productive and more expensive to develop. Combined with a political climate supportive of zero growth, Metro will not likely expand the growth boundary significantly to moderate upward pressure on housing prices.

Several lessons can be gleaned from Portland's experience with growth boundaries.

- First, urban-growth boundaries can achieve goals such as encouraging higher residential densities and infill, but these outcomes come at a cost. If the growth boundary is successful, it will constrain vacant land and require housing development on more-expensive land and on lots much smaller than consumers would otherwise prefer.
- Second, growth boundaries encourage consumers to trade off land for larger homes with fewer open-space amenities such as private yards and reduce their overall quality of life by constraining land supply and contributing to higher land costs.

- Third, growth boundaries contribute to higher housing costs, although the magnitude is uncertain. Metro could help alleviate housing costs by releasing more low-cost vacant land for development (although it chooses not to).
- Fourth, growth boundaries will encourage the creation of new interest groups opposed to growth-boundary expansion. Local policymakers will be encouraged to maintain the boundary as a binding constraint on land development, opting for increasing densities in existing areas rather than expanding the boundary significantly.
- Fifth, the political support for growth boundaries and growth management in general will change as the full consequences of the policies become evident. Higher housing prices, for example, are contributing to concerns by low- and moderate-income households that the growth boundary may work against their interests.

To avoid the unintended side effects of urbangrowth boundaries, state and local policymakers should consider alternative, market-based approaches to growth management. Market-based approaches substitute a regulatory approach to development that restricts consumer choice for one where the real-estate market and incentives are created to achieve the same goals. Examples of market-oriented approaches include reforming zoning ordinances to allow for market-determined densities, allowing for administrative review of development projects without significant negative impacts on neighboring property owners and the community more generally, privatization or full-cost pricing for public infrastructure, and voluntary conservation easements and privately funded purchase-ofdevelopment rights to protect open space.

Glossary of Terms

Density: number of people or households per acre of land.

Green belt: a strip of dedicated open space around cities where land development is prohibited except for agricultural, park land, and open-space uses.

Growth management: the direction, control, channeling, or guidance of commercial and residential development through public policy.

Housing amenity: quality or characteristic of a home.

Housing-substitution effect: the trade offs consumers make among housing characteristics such as lot size, bedrooms, garage areas, bathrooms, etc.

Infill: the development of vacant land in already urbanized areas with existing homes and buildings.

Infrastructure: public services such as roads, sewers, water, schools, etc.

Low density: low number of people or households per acre of land. Single-family, detached homes with large lots are often defined as low density, although the actual size of the lot is rarely specified.

Metro: the regional planning agency overseeing Portland's growth boundary and the implementation of the region's 2040 longrange plan. Metro's board is the only elected regional government in the nation and is responsible for regional transportation and land-use planning.

Refill: the combination of in-fill development and redevelopment of existing land in urbanized areas.

Urban-growth boundaries (or urban-limit lines): politically designated line around cities beyond which development is either prohibited or highly discouraged.

Urban-service area: a boundary beyond which public infrastructure services will not be extended.

- Estimate based on known growth boundaries provided by Samuel R. Staley, Director of the Urban Futures Program, Reason Public Policy Institute, Los Angeles, California. Most of these growth boundaries are in Oregon, Washington, California, and Lancaster County, Pennsylvania. These numbers do not include urban-service boundaries. For a discussion of the distinction, see 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, October 1999).
- William Fulton, "Sliced on the Cutting Edge: Growth Management and Growth Control in California," in *Growth Management: The Planning Challenge of the 1990's*, ed. Jay M. Stein (Newbury Park, California: Sage Publications, 1993), pp. 113-126.
- A summary of this trend can be found in Staley, Edgens, and Mildner, A Line in the Land. Growth controls have a long history in California, beginning in earnest with land-use regulation in coastal areas. See H.E. Frech III, "The California Coastal Commissions: Economic Impacts," in Resolving the Housing Crisis: Government Policy, Decontrol, and the Public Interest, ed. M. Bruce Johnson (San Francisco: Pacific Research Institute for Public Policy, 1982), pp. 259-274.
- 4 For housing deficit projections, see Phil Serna, *Tri-Valley Housing Needs Assessment*, Home Builders Association of Northern California, June 1998, Table C.
- 5 Staley, Edgens, and Mildner, A Line in the Land.
- 6 Janice Fillip, "Stretching the Limits," Comstock's (February 1998), pp. 47-48. A more detailed discussion of this project can be found in Staley, Edgens, and Mildner, A Line in the Land.
- 7 Building permit data from Construction Industry Research Board, Burbank, California.
- 8 This is more fully discussed in Staley, Edgens, and Mildner, *A Line in the Land*.
- Construction Industry Research Board, Burbank, California.
- 10 Ibid.
- Increasing density is implied in adopting the growth boundary. By preventing development outside a geographic boundary, investment is expected to be channeled into existing areas through redevelopment of infill. This increases the residential density of neighborhoods. This goal has become more explicit in areas such as Portland that are explicitly using growth management to achieve more compact forms of development by reducing lot sizes and increasing the multifamily share of the local housing market.
- The homebuilders examined interest rates, medianfamily income, and home sales in each metropolitan area to determine what proportion of homes could be purchased by a family with the median income in the metropolitan area. See also the discussion in Richard H. Carson, Paying for Oregon's Growth (Beaverton, Oregon: New Meridian Press, October 1998). Rapid housing-price appreciation is only circumstantial evidence of whether urban-growth boundaries reduce housing affordability. Although the Oregon system of landuse management is unique, all metropolitan areas have some level of local zoning and building code regulation that, if stringent enough, could have a significant effect on the supply of housing. Lower-housing supply causes demand for existing homes to increase, leading to increased home appreciation. However, compa-

rable data on the harshness of land-use regulation on a metropolitan-wide basis are generally not available, although economist Gerrit Knaap has examined the differences within the Portland metropolitan area. See Gerrit J. Knaap, "The Price Effects of Urban Growth Boundaries," Land Economics, vol. 61, no. 1 (February 1985), pp. 26-35. In addition, some metropolitan areas may have significant water, mountain, terrain, or public ownership of land that may restrict the availability of local land supply for housing development. Finally, there may be significant variations in local policies that affect the underlying attractiveness or amenities of a metropolitan area. In Portland's case, the implementation of a series of property tax-cut measures, beginning in 1991, may have had such an effect.

- 13 See the discussion in Staley, Edgens, and Mildner, A Line in the Land, pp. 17-19.
- 14 Ibid.
- Metro notes that land prices are rising as fast or faster than in cities without growth boundaries, including Salt Lake City, Phoenix, and San Diego. A number of factors in addition to the growth boundary are probably also contributing to the boom in housing prices, including: the national decline in interest rates since 1989; the precipitous decline in property taxes in Oregon begun through a 1990 ballot-box initiative; Portland's rapid employment growth; investment in new high-tech businesses; and rising household incomes.

These effects, however, should be temporary as the building industry adjusts to higher levels of demand and new housing supply comes on line and prices moderate. For the Portland metropolitan area, population is increasing between 2.0 percent and 2.5 percent per year. See Portland Metro, Urban Growth Report, December 1997, p. 42. While larger than the national average, this is less than other metropolitan areas such as Las Vegas (about 6.5 percent per year), Phoenix (about 3.0 percent), Riverside (about 2.7 percent), and Orlando (about 2.7 percent). These fast-growing cities did not experience significant housing price appreciation during the same period. While Portland's housing prices increased by 61.5 percent from 1990 to 1995, housing prices in Las Vegas—the fastest growing city among the cities listed—increased by about one third as fast (22.0 percent during this period)

- 16 Good data on land prices are difficult to obtain. The Metro staff uses data from the Urban Land Institute's ULI Market Profiles to compare Portland to other cities. Much of this information, however, is drawn from very small or narrow samples. For example, the Los Angeles data come from development in a single place, the Antelope Valley, and the Las Vegas data are a per lot price estimate derived from builders' cost information.
- 7 Washington County is the most-populous suburban county in the four-county Portland area and the county with the greatest new-home production. The Washington County Tax Assessor reviews sales prices and determines an average ratio of sales price to assessed value for each class of property. These ratios are used to adjust assessments and can be interpreted as an average-percentage price increase for property within these property classes. With low transaction volumes, the average-percentage increase might be unrepresentative of the class as a whole. However, errors due to the low number of observations do not create either an upward or downward bias and should be minimized over a number of years.

- 18 We have adjusted the price index by the Consumer Price Index and report inflation-adjusted price indices. This adjustment shows that about 20 percent of the increase in lot prices over the 1990-95 period was due to inflation. Thus, lot prices in Washington County grew by 79 percent in inflation-adjusted terms.
- 19 Gerard C.S. Mildner, "Growth Management in the Portland Region and the Housing Boom of the 1990s," *Urban Futures Working Paper No. 98-1*, Reason Public Policy Institute, May 1998, http://www.urbanfutures.org.
- 20 Gerrit J. Knaap and Arthur C. Nelson, "The Effects of Regional Land Use Control in Oregon: ATheoretical and Empirical Review," *The Review of Regional Studies*, vol. 18, no. 2 (1988), pp. 37-46.
- 21 Knaap, "The Price Effects of Urban-growth Boundaries in Metropolitan Portland, Oregon," pp. 26-35.
- 22 The growth boundary was new enough that the 20-year supply of vacant land provided little constraint on development. Land is converted to residential uses as local zoning boards permit development. See Knaap, "The Price Effects of Urban-growth Boundaries," p. 33.
- 23 Jerry Weitz and Terry Moore, "Development Inside Urban-growth Boundaries: Oregon's Empirical Evidence of continuous Urban Form," Journal of the American Planning Association, vol. 64, no. 4 (Autumn 1998), p. 427.
- 24 Deborah A. Howe, "Growth Management in Oregon," in Growth Management: The Planning Challenge of the 1990's, ed. Jay M. Stein (Newbury Park, California: Sage Publications, 1993), p. 70. See also T. Moore and A.C. Nelson, "Lessons for Effective Urban-containment and Resource-land Preservation Policy," Journal of Urban Planning and Development, vol. 120, no. 4 (December 1994); V. Gail Easely, Inside the Lines, Planning Advisory Service Report Number 440 (Chicago, Illinois: American Planning Association, 1992).
- 25 Howe, "Growth Management in Oregon," p. 65.
- 26 Portland Metro, *Urban Growth Report Addendum*, August 1998, pp. 14-15.
- 27 Ibid., Figure 13, p. 15. Land consumption has declined from 2,900 acres in 1995, to 2,300 in 1996, to 1,700 in 1997. The share of multifamily housing units among approved units tends to vary considerably among and within metropolitan areas. See Gerrit Knaap and Arthur C. Nelson, The Regulated Landscape: Lessons on State Land Use Planning from Oregon (Cambridge, Massachusetts: Lincoln Institute of Land Policy, 1992), pp. 87-91
- 28 Portland Metro, Urban Growth Report Addendum, Figure 2, p. 3. This includes development of new land, infill, and projected redevelopment of existing land.
- 29 Section 3.07.120 of Metro's function plan establishes minimum density criteria of between 5,000 and 6,500 square foot lots and that "no development application... may be approved unless the development will result in the building of 90 percent or more of the maximum number of dwelling units per net acre permitted by the zoning designation for the site." Section 3.07.810 states "All cities and counties within the Metro boundary are hereby required to amend their comprehensive plans and implementing ordinances to comply with the provision of this function plan within twenty-four months of the effective date of this ordinance."
- 30 An initial survey by Metro estimated vacant land had fallen to 50,000 acres. A new land inventory subse-

- quently conducted by Metro found 55,000 vacant acres. See the discussion in Mildner, "Growth Management in the Portland Region and the Housing Boom of the 1990s".
- 1 Ibid. Metro estimates that 15,950 acres are unbuildable because they are in flood plains, environmentally sensitive areas, have steep slopes, or are part of a 200 foot river buffer. Another 15,080 acres will be needed for streets, schools, parks, churches and other public facilities. Thus, just 38,370 acres are available for residential, commercial, and industrial development within the growth boundary. See Portland Metro, *Urban Growth Report*, December 1997, pp. 11-17.
- 32 Sonny Conder, Residential Refill Study, Growth Management Services Department Technical Report, Portland Metro, February 10, 1999.
- 33 Conder, Residential Refill Study.
- 34 Ibid
- 35 Ibid.
- 36 Sonny Conder and Karen Larson, "Residential Lot Values and the Capital-Land Substitution Parameter—Some Recent Results from the Portland Metro Area," Growth Management Services Division, Portland Metro, unpublished paper, May 1998. The sample consisted of 5,500 records from Clackamas, Multnomah, and Washington Counties in Oregon and 2,200 records from Clark County, Washington.
- 37 Ibid., p. 6. Conder and Larson speculate that this may be the result of smaller household sizes and the increase in multiple-income households.
- 38 Ibid., pp. 6-7. The estimates ranged from 0.642 to 0.8, where 1 represents a 1:1 willingness to trade-off lot size for home size and 0 represents no substitution. In other words, a ratio of 1 would imply that, as home prices increase, a 10% increase in home size would be equivalent to a 10% reduction in lot size.
- 39 Mildner, "Growth Management in the Portland Region and the Housing Boom of the 1990s."
- 40 "Metro Council's Urban Growth Boundary Expansion Decisions," http://www.metro.dst.or.us/growth/ugbursa/ ugbupdate.html.
- 41 Local real-estate consultant Jerald Johnson estimates land take-up of 2,850 acres per year. See Jerald Johnson, Hobson, Johnson, and Associates, memorandum dated October 24, 1997. This estimate is higher than Metro's estimate of about 2,000 gross buildable acres per year. See Portland Metro, *Urban Growth Report Addendum*, p. 14.
- 42 This was Goal 10 in the statewide growth-management law. See Gerrit J. Knaap, "Self-Interest and Voter Support for Oregon's Land Use Controls," Journal of the American Planning Association, vol. 53, no. 1 (Winter 1987), pp. 92-97; Gerrit J. Knaap, "The Political Economy of Growth Management in Oregon."
- 43 For homes, the affordable housing threshold was pegged at \$125,000. For apartments, the threshold was \$500 per month. Jerald Johnson, "Issues Associated with the Imposition of Inclusionary Zoning in the Portland Metropolitan Area," Hobson, Johnson, and Associates, Portland, Oregon, unpublished paper, December 1, 1997.
- 44 Arthur C. Nelson, "Preserving Prime Farmland in the Face of Urbanization: Lessons from Oregon," *Journal of the American Planning Association*, vol. 58, no. 4 (Autumn 1992), p. 479.
- Nelson, "Preserving Prime Farmland in the Face of Urbanization," p. 479.

