

## Chapter 14

# Urban Containment American Style: A Preliminary Assessment

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*"The Lord said to Moses ... Command the people of Israel, that they give to the Levites ... cities to dwell in; and pasture lands round about the cities ... The pasture lands of the cities ... shall reach from the wall of the city outward ... all around. "The city shall be in the middle."*

Numbers 35: 1-5

### **Introduction**

Urban containment is an attempt to confront the reasonable development needs of the community, region, or state, and accommodate them in a manner that preserves public goods, minimizes fiscal burdens, minimizes adverse interactions between land uses while maximizing positive ones, improves the equitable distribution of the benefits of growth, and enhances quality of life. At its heart, urban containment aims to achieve these goals by choreographing public infrastructure investment, land use and development regulation, and deployment of incentives and disincentives to influence the rate, timing, intensity, mix, and location of growth. Broadly speaking, urban containment programs can be distinguished from traditional approaches to land use regulation by the presence of policies that are explicitly designed to limit the development of land outside a defined urban area, while encouraging infill development and redevelopment inside the urban area.

Like all policies set on changing the status quo, urban containment policy has its champions and detractors. An exhaustive list of different views is beyond the scope of the present study but some general characterizations can be made. Proponents argue that containment will do a better job of preserving open space, widening transportation options, improving accessibility, integrating the races, and enhancing incomes than the status quo. Opponents may concede some points but argue that containment raises housing prices, reduces location choices, and generally reduces quality of life. Who is right? Probably both.

The purpose of this chapter is to characterize generally American-style urban containment and compare selected metropolitan areas with and without containment for their differences over time in selected, measurable outcomes. This is a

preliminary assessment and is not entirely conclusive. Much more work needs to be done to compare outcomes to urban containment relative to the status quo.

## **Overview**

The idea of containing urban areas is not new. Containing the population within walls was viewed in biblical times through the 19<sup>th</sup> Century as a means of defending cities and incidentally preserving farmland to help feed the people. Technological improvements – chiefly the automobile and telephone combined with farm mechanization, public health concerns about overcrowding, national defence concerns favouring deconcentration, cultural preference for space, and burgeoning population growth broke down the proverbial walls resulting in people spreading – some say sprawling – out from urban centres. This has purportedly created several problems such as loss of open space, increasing air pollution, worsening social segregation, increasing automobile dependency, declining economies of agglomeration leading to lower economic performance, and overall declining quality of life.

In response to concerns about contemporary development patterns, some American states and metropolitan areas have attempted to contain the outward expansion of urban development. Although the idea of urban containment is not new in America -- some New England townships in the 17<sup>th</sup> Century forbade homes from being built in the nearby farmland -- its modern form arose only as recently as the late 1950s. Lexington and Fayette County, Kentucky, is credited with being the nation's first effort to contain urban sprawl, chiefly by limiting development within an urban service line and preventing urban-scale residential development in the Bluegrass area around. Today, one can fly over this part of Kentucky to see development clustered in the centre of Fayette County with open spaces surrounding Lexington but traditional urban sprawl in the surrounding counties.

From this modest beginning came statewide urban containment in Hawaii, upon its admission into the Union. Hawaii is a natural place to contain urban development, whether through policy or natural features. Although it is the nation's first statewide urban containment effort it is not considered a mainstream example because of its location and the fact that most of the land area is not available for development because of terrain and ownership patterns.

During the 1970s, urban containment emerged in a few more metropolitan areas, chiefly Miami-Dade County (Florida), Minneapolis-St. Paul (Minnesota), Boulder (Colorado), Sarasota (Florida), and Sacramento (California), and in one state – Oregon. Florida's growth management legislation in the middle 1980s enabled local governments to adopt various forms of urban containment strategies although few have. Washington State adopted Oregon-style containment laws in the early 1990s and applied it to the most urbanized counties (all counties west of the Cascade mountains and counties with metropolitan statistical areas in the east).

Beginning in the 1970s and continuing through the rest of the 20<sup>th</sup> Century, numerous metropolitan areas saw individual local governments pursue containment on their own -- chiefly throughout coastal metropolitan California. What less than half a century ago was but one clear example of urban containment in metropolitan America, our research has revealed that more than 100 metropolitan areas have at least one example of metropolitan-wide or local government containment. Examples are not limited to areas of burgeoning population growth -- Sioux Falls, South Dakota has one of the oldest programs.

With urban containment gaining momentum, it is time that we ask: what difference does containment make? That is the purpose of this chapter.

### **Urban Containment American Style**

To American planners and scholars, Great Britain offers the quintessential example of urban containment and the leading work on British style containment is Peter Hall, et al.'s *The Containment of Urban England* (two volumes, 1973). British-style containment is achieved through nationalization of development rights outside urban development stoplines through a compensatory scheme. Within the stoplines, urban development is facilitated through infrastructure investment, large-scale publicly-financed renewal of underused urban land and brownfield sites. A cornerstone of the British approach is exacting financial and other concessions on developers who are successful in extending stoplines outward into greenfields (Grant 1999).

Americans are no less adept at creating institutional mechanisms to guide growth (see DeGrove 1983, 1992; Knaap and Nelson 1992; Nelson and Duncan 1995; Porter 1997) but what is lacking usually is the will to achieve containment through purchase of development rights to open spaces beyond urban areas (with a few exceptions). American-style urban containment is different from Britain's, and really not consistent across the country. Let us review what we find to be the most prevalent styles of American urban containment: submetropolitan, unbounded metropolitan, and bounded metropolitan. There is another form of containment that needs to be considered: naturally contained. Perhaps the best-known example is Los Angeles, which is hemmed in by an ocean, mountains, deserts, and vast public ownership of land.

#### *Submetropolitan*

This is the earliest and probably most prevalent form of urban containment. It occurs where one local government, usually in a rapidly growing region, wishes to shape development coming to it in ways different than is occurring there and elsewhere. A notable example is Petaluma, California, that launched its urban containment effort in the early 1970s. Then at the edge (but now clearly within) of the San Francisco

metropolitan area, Petaluma sought to control the timing and form of development that it would accommodate. The problem facing Petaluma was its inability to work within a metropolitan-wide framework to guide development because there was no framework. It estimated that its regional fair share of new residential development averaged about 500 or so units annually and set about to guide how that development would occur. Through cooperation with Sonoma County, Petaluma limits new development to its urban growth boundary. Only development meeting its criteria (such as mixed use and mixed income) is permitted. No development is allowed in the open spaces surrounding Petaluma because of the county's large-lot zoning and septic system regulations. The administrative complexity of Petaluma's approach rivals that of Great Britain albeit at a much smaller scale and without compensation.

Even more complex and much broader in scope is Montgomery County, Maryland, north of and adjacent to Washington, DC. This countywide effort directs development into clearly definable urban centres (most with direct access to the Washington Metro rail line), requires residential development to include mixed income units, creates strong incentives for mixed use development, and prevents development on less than 25-acre (10-hectare) lots in the countryside. It also includes a transfer-of-development rights program wherein farmers in "sending" areas can sell one such right for every five acres they own to a developer who can then increase residential density in "receiving" areas by one unit.

Many more examples of this style of containment exist, and it is the most prevalently-found of the three. Notable examples include the pioneering effort by Lexington-Fayette County, Boulder, Sioux Falls, most urban centres in the San Francisco Bay Area, and, most recently, Ventura County (northwest of Los Angeles).

#### *Unbounded Metropolitan*

Beginning in the 1970s, several metropolitan areas initiated metropolitan-wide containment efforts. The earliest and best known is Minneapolis-St. Paul (Twin Cities). Through the Metro Council, water and wastewater service is restricted to areas within an urban service boundary (USB) beyond which urban-scale development is not allowed. The USB is designed to have a 10-year supply of urbanizable land and every five years it is extended outward to accommodate the next 10 years. Outside the USB, however, homesites on one (0.4) to five (2.0) acre (hectare) parcels of land are not only allowed but proliferate. The Twin Cities containment program therefore merely contains development connected to public water and wastewater systems but not other forms of low-density urban development.

In fact, among major metropolitan areas (those of more than two million residents in 2000), only Atlanta has lower density development than the Twin Cities (based on 1990 census figures). Other notable examples of unbounded metropolitan urban containment include Austin, Denver, and Orlando.

*Bounded Metropolitan*

The nation's oldest and best-known example of bounded urban containment was launched by metropolitan Portland, Oregon, in the late 1970s. It is administered by a regionally-elected body known simply as "Metro." In theory, urban development is contained with an urban growth boundary designed to accommodate urban for about 20 years, after which the UGB was to be expanded to meet the next 20 years demand for growth. In practice, the UGB has changed very little in total land area and almost all of the next 20 years of development is intended to be accommodated within mixed use, urban infill, redevelopment, and brownfield development sites. Outside the UGB, no urban scale development is allowed (aside from areas already built and committed to nonrural uses). This is accomplished through very large lot zoning and restrictions on nonfarm and nonforest dwellings. Other leading examples of bounded metropolitan containment are Miami-Dade County (the nation's oldest containment program among major metropolitan areas), Broward and West Palm Beach counties, Sacramento, San Diego, and Seattle.

*Natural Containment*

The foregoing are examples of policy-driven containment. There are situations where containment occurs because of natural or political limitations. Los Angeles is perhaps the best-known example. Phoenix is another example because severe water supply limitations and extensive public ownership of land truly limit the outward expansion of urban development there.

**Analytic Approach**

What differences does containment make and do different styles have different outcomes? The question can be addressed descriptively by comparing examples of each style of containment with a reasonably comparable metropolitan area that does not engage in containment. Matched pair and group-wise comparisons are thus presented here (but without statistical testing for significance). The pairs selected for study are based generally on their comparability in terms of size and/or growth rate during the 1990s, location within the same state or region (with some necessary exceptions), and landscape. The pairs are shown in Table 14.1 and descriptions follow.

**Table 14.1 Experimental and control selections for urban containment assessment in the US**

Containment style	Containment group	Control group
<i>Submetropolitan</i>	Lexington-Fayette County KY Nashville TN	Knoxville TN Memphis TN
<i>Unbounded</i>	Minneapolis-St. Paul MN Sarasota FL	Kansas City MO/KS Ocala FL
<i>Bounded</i>	Portland OR/WA Sacramento CA Bakersfield CA	Charlotte NC
<i>Natural</i>	Los Angeles CA Phoenix AZ	Dallas-Ft. Worth TX Atlanta GA

*Submetropolitan Containment*

Lexington and Knoxville are both major university cities (University of Kentucky and University of Tennessee) in neighbouring states sharing roughly the same landscape (west of the Appalachian Range) and growth rates during the 1990s (21.1% and 30.5% respectively). Lexington has employed submetropolitan urban containment for nearly half a century while Knoxville chooses a laissez-faire attitude to managing growth. Nashville and Memphis are in the same state and have the same landscape. Both grew faster than the national average but Nashville did grow twice as fast, 33.4% to 17.1%.

*Unbounded Metropolitan Containment*

Minneapolis-St.Paul and Kansas City are the two largest metropolitan areas in the upper midwest and each spill over into adjacent states. The Twin Cities has had an urban service boundary limiting urban-scale development since the 1970s but Kansas City employs no policy restraints on development. The landscape is essentially flat and both had roughly the same growth rates in the 1990s (25.1% and 17.5% respectively). Sarasota and Daytona Beach are coastal counties in the same state, Florida, sharing similar landscapes and growth rates (40.9% and 49.5% in the 1990s respectively). Both metropolitan areas are subject to statewide growth management planning in Florida but only Sarasota has an urban growth boundary and it predates Florida's current planning laws.

*Bounded Metropolitan Containment*

Portland, Oregon and Charlotte, North Carolina are the largest metropolitan areas in their respective states. Although on different coasts and decidedly different cultures, this pair was selected for several reasons. First, other regional candidates for Portland are either already under some form of containment (such as Sacramento and Denver) or the landscape lends itself naturally to containment (such as Salt Lake City and Phoenix). Second, the terrain of both is flat to gently rolling and there is very little restraint to having individual water wells and septic systems in both. (The mountains to the east of Portland are analogous to the mountains to the west of Charlotte.) Third, they enjoyed roughly the same rate of growth in the 1990s (32.0% and 38.8% respectively). Portland has had a metropolitan-wide urban growth boundary with restrictive open space development since the 1970s while Charlotte uses only a loosely drawn and highly flexible urban services boundary in only the central county (Mecklenberg) with little constraint to urban-scale development outside. Sacramento and Bakersfield are in the same agricultural region of the same state (California) and had similar growth rates during the 1990s (45.7% and 44.4% respectively). Sacramento has employed an urban limit line since the 1970s with restrictions on open space development outside it while there are no such constraints in Bakersfield.

*Natural Metropolitan Containment*

Los Angeles and Dallas-Ft. Worth are large metroplexes that differ dramatically. Los Angeles is hemmed in by an ocean, mountains and deserts while Dallas sits in the middle of an essentially flat plain with no barriers to development -- except that water is deep. Los Angeles is the nation's most densely settled metropolitan areas while Dallas-Ft. Worth is among the least. Both grew rapidly during the 1990s (31.2% and 49.1% respectively). Other than missing an ocean, Phoenix and Atlanta enjoy similar contrasts and both grew rapidly (72.9% and 60.8% respectively). During the period from 1970 through 2000, these metropolitan ranked first and second, respectively, in the rate of growth among major metropolitan areas.

**Outcome Measures**

Academic literature suggests that urban containment promises much such as reducing land consumption, automobile dependency, racial segregation, and improving economics of agglomeration, among other things (see Nelson 2000).

*Reducing Land Consumption*

By containing the outward expansion of development, the hope is that less land will be converted from open space to urban uses. This would preserve farmland, forest land, and other open spaces for their public good features such as air and water

**Table 14.2 Change in urbanized land divided by population change, 1982-97**

Containment group		Control group	
	Figure		Figure
<i>Submetropolitan</i>			
Lexington-Fayette County KY	3.23	Knoxville TN	4.15
Nashville TN	3.08	Memphis TN	3.94
Group (unweighted)	3.16	Group (unweighted)	4.05
<i>Unbounded</i>			
Minneapolis-St. Paul MN	2.43	Kansas City MO/KS	2.10
Sarasota FL	0.89	Ocala FL	1.52
Group (unweighted)	1.66	Group (unweighted)	4.05
<i>Bounded</i>			
Portland OR/WA	1.53	Charlotte NC	1.90
Sacramento CA	1.09	Bakersfield CA	2.78
Group (unweighted)	1.31	Group (unweighted)	4.05
<i>Natural</i>			
Los Angeles CA	0.88	Dallas-Ft. Worth TX	1.11
Phoenix AZ	0.57	Atlanta GA	1.34
Group (unweighted)	3.16	Group (unweighted)	4.05
<i>All Contained Metros</i>	<i>1.72</i>	<i>All Uncontained Metros</i>	<i>2.36</i>
<i>Policy Contained Metros</i>	<i>2.04</i>	<i>Policy Match Metros</i>	<i>2.73</i>

Source: Adapted from Fulton, Pendall, Nguyen and Harrison (2001).

cleansing, controlling floods, recharging aquifers, preserving habitats, and providing natural buffers between urban areas. Reducing land consumption is also important for other things such as reducing dependency on the automobile, vehicle miles travelled, and air pollution, and improving economies of agglomeration.

Table 14.2 reports an index relating the change in urbanized land to population growth between 1982 and 1997. Numbers more than 1.0 indicate more land is being consumed than the population is growing. For the most part, except for the naturally contained metropolitan areas, all selected metropolitan areas “sprawled” during the 1990s in the sense that more land was consumed than the population grew. The only exception among policy-contained metropolitan areas is Sarasota. Within all groups, contained areas sprawled less during the 1990s than uncontained areas. Also, what is interesting is that the index for land consumption among containment efforts declines the more rigorous the effort is, from 3.16 among submetropolitan containment efforts to 1.66 among unbounded metropolitan efforts to 1.31 among



bounded metropolitan efforts. Yet, it is the naturally contained metropolitan areas that sprawled the least.

There are interesting comparisons. Dallas-Ft. Worth, an uncontained metropolitan area, sprawled only slightly more than metropolitan Portland, while Atlanta—whom some consider the quintessentially sprawled metropolitan area—sprawled less than the Twin Cities. However, we know nothing about where “sprawl” occurs.

In the Portland and Twin Cities contexts, if the majority of newly developed land occurred inside the UGB then what appears to be sprawl may really be development occurring where it is intended. Another issue emerges. Why is the sprawl indicator for the Twin Cities so large (land consumption increased 61.1% compared to growth of 25.1%)? Could it be that regulations inside the urban service boundary actually spin development outward? Table 14.2 elicits more questions than can be answered, and is really just the beginning of inquiry into the difference outcomes of varying styles of containment.

#### *Reducing Single-Occupant Vehicle Dependency*

Using the Census 2000 Supplemental Survey, which applies to only counties of more than 250,000 population and then only to central counties, Table 14.3 presents changes in single-occupant mode during the journey to work between 1990 and 2000. Results are little more mixed than those seen in Table 14.2. In all groups, policy-induced containment styles performed better in shifting people away from the single-occupant mode than the metropolitan controls. The big surprise is really with the Twin Cities, which saw the largest drop in the single-occupant mode among all metropolitan areas -- the surprise being that it also had among the highest indexes of sprawl. The anomaly is attributable to scales of analysis. The analysis in Table 14.3 is of central counties while all the other tables compare all counties within selected metropolitan areas. Thus, we might surmise that Hennepin County has been very successful in shifting people away from the single-occupant mode but perhaps the rest of the metropolitan area has not been as successful. Generally speaking, containment of all types did a better job of keeping single-occupant commuting in check than noncontainment.

**Table 14.3 Change in single-occupant vehicle journey-to-work, largest central county, 1990-2000**

Containment Group		Control Group	
	Figure		Figure
<i>Submetropolitan</i>			
Lexington-Fayette County KY		Knoxville TN	
1990	78.4	1990	80.6
2000	81.0	2000	88.9
Change	+3.31%	Change	+10.30%
Nashville TN		Memphis TN	
1990	78.3	1990	77.8
2000	76.1	2000	75.9
Change	-2.81%	Change	+2.44%
Group (unweighted)	+0.25%	Group (unweighted)	+3.93%
<i>Unbounded</i>			
Minneapolis-St. Paul MN		Kansas City MO/KS	
1990	74.2	1990	74.8
2000	64.5	2000	77.8
Change	-13.07%	Change	+4.01%
Sarasota FL		Ocala FL	
1990	79.8	1990	76.3
2000	79.9	2000	80.0
Change	+0.12%	Change	+4.85%
Group (unweighted)	-6.48%	Group (unweighted)	+4.43%
<i>Bounded</i>			
Portland OR/WA		Charlotte NC	
1990	67.6	1990	78.7
2000	65.2	2000	81.3
Change	-3.55%	Change	+3.03%
Sacramento CA		Bakersfield CA	
1990	75.8	1990	74.7
2000	74.3	2000	75.1
Change	-1.98%	Change	+0.54%
Group (unweighted)	-2.77%	Group (unweighted)	+1.92%
<i>Natural</i>			
Los Angeles CA		Dallas-Ft. Worth TX	
1990	70.1	1990	76.2
2000	71.2	2000	76.5
Change	+1.57%	Change	+0.04%
Phoenix AZ		Atlanta GA	
1990	75.0	1990	70.0
2000	63.9	2000	73.3
Change	-1.47%	Change	+4.71%
Group (unweighted)	+0.05%	Group (unweighted)	+2.38%
<i>All Contained Metros</i>	-2.74%	<i>All Uncontained Metros</i>	+3.17%
<i>Policy Contained Metros</i>	+3.34%	<i>Policy Match Metros</i>	
	-3.66%		

Source: Data adapted from *Census 2000 Supplemental Survey for central counties* and *1990 Census*.

*Reducing Vehicle Miles Travelled*

Table 14.4 compares changes in vehicle-miles-travelled (VMT) per resident in the selected metropolitan areas. The data come from the Texas Transportation Institute (TTI) (2002). Because of missing values for the smallest metropolitan areas, within and among group comparisons are not easy to make. For the most part, however, contained metropolitan areas saw either smaller increases or reductions in VMT per resident compared to the matched metropolitan areas. One interesting anomaly is with metropolitan Portland, which saw a 30.7% increase in VMT, which seems inconsistent with its performance in other indicators. However, the source of data itself creates a problem. The TTI divides regional VMT by “urban” population. In the case of Portland, the area classified as “urban” by TTI differs from that defined by the Census, being smaller and not including all area within the UGB. In fact, the urban population denominator is only about a half of the entire population living inside the UGB. TTI figures may be misleading in this application. Nonetheless, assuming errors cancel when using pooled analysis, it would appear that containment generally keeps the lid on VMT increases over time relative to metropolitan areas not subject to containment.

*Reducing Racial Segregation*

Almost by definition, urban containment ought to bring races together while sprawl separates them. Table 14.5 compares contained and uncontained metropolitan areas in terms of their change in the index of segregation between African-American (including all self-identified categories) and Anglo residents. Data on racial segregation from the Mumford Centre at the State University of New York at Albany show that segregation is declining nationally. Using the index of segregation, where 100 means all members of a racial minority settle in one location and 0 means they are distributed proportionate to their share of Anglo population, the national average (unweighted) index for African-American segregation was 58.85 in 1990 but fell to 51.43 or 12.6% in 2000. Scores of more than 60 are considered evidence of systematic racial segregation. What we see in Table 14.5 is that, for the most part, contained metropolitan areas became less segregated at a pace comparable to the national average the control metropolitan areas became less segregated at a pace slower than the national average. The group where the pace of desegregation was the highest and outpaced the national average is bounded metropolitan containment.

**Table 14.4 Change in vehicle-miles-travelled, metropolitan areas, 1990-2000**

Containment Group		Control Group	
	Figure		Figure
<i>Submetropolitan</i>			
Nashville TN		Memphis TN	
1990	27.6	1990	18.8
2000	32.8	2000	23.1
Change	+18.84%	Change	+22.87%
<i>Unbounded</i>			
Minneapolis-St. Paul MN		Kansas City MO/KS	
1990	21.5	1990	23.7
2000	23.0	2000	28.9
Change	+6.98%	Change	+21.94%
<i>Bounded</i>			
Portland OR/WA		Charlotte NC	
1990	16.3	1990	22.5
2000	21.3	2000	27.1
Change	+30.67%	Change	+20.44%
Sacramento CA		Bakersfield CA	
1990	21.1	1990	16.8
2000	20.8	2000	16.5
Change	-1.42%	Change	-1.79%
Group (unweighted)	+14.63%	Group (unweighted)	+9.33%
<i>Natural</i>			
Los Angeles CA		Dallas-Ft. Worth TX	
1990	22.8	1990	25.5
2000	21.4	2000	29.5
Change	-6.14%	Change	+15.69%
Phoenix AZ		Atlanta GA	
1990	20.9	1990	28.8
2000	21.2	2000	34.1
Change	+1.44%	Change	+18.40%
Group(unweighted)	-2.36%	Group (unweighted)	+17.05%
<i>All Contained Metros</i>	+8.40%	<i>All Uncontained Metros</i>	+16.26%
<i>Policy Contained Metros</i>	+12.23%	<i>Policy Match Metros</i>	+19.99%

Source: Data adapted from Texas Transportation Institute (2002). Comparable data do not exist for Lexington-Fayette County KY, Knoxville TN, Sarasota FL, or Daytona Beach FL.

While urban containment could lead naturally to greater integration of the races simply because people cannot escape, this is not necessarily the case. Arguably, the most contained metropolitan area in the contiguous 48 states is Los Angeles, which is highly segregated, desegregated at a pace much less than the national average. In contrast, other metropolitan areas engaged in policy-induced containment saw segregation fall at a pace comparable to or greater than the national average. The reason may be that such metropolitan areas are more responsive to a wider range of policy issues than other metropolitan areas, and are thus prone to enacting inclusionary housing policies (Pendall, 2000; Nelson, et. al., 2002). This is an area ripe for further research.

#### *Improving Economies of Agglomeration*

Concentration of activity can reduce economic transaction costs and create other efficiencies. Such “agglomeration” economies should be capitalized into higher per capita incomes. Table 14.6 compares changes in personal per capita income between 1989 and 1999 using the Regional Economic Information System (2002). Figures are not adjusted for inflation. In all policy-driven containment examples, incomes rose faster than in noncontainment areas. There appears to be some evidence that containment may lead to economies of agglomeration that are reflected in increasing personal per capita income.

#### **Review**

Urban containment is controversial primarily because it aims to undo centuries of unimpeded development across the United States. The nation was built on giving people land and assuring their right to use it profitably. Indeed, in the 100 years between 1850 and 1950, the United States gave away half of the 1.6 billion acres of land it had acquired through secession, war, occupation, and purchase. Were it not for millions of people "sprawling" from the east across the continent to the west, the United States would surely be a smaller and different nation.

During the 20<sup>th</sup> Century, technological improvements created burgeoning metropolitan areas while rising incomes gave people the opportunity to express their preference for life-styles that are decidedly not urban though not rural. The resulting development patterns have led allegedly to adverse outcomes. To change development patterns, a growing number of local, regional, and state governments are attempting to contain the outward expansion of urban areas. While the containment of Great Britain may be viewed by some as the quintessential approach to containment, American-style containment is different and diverse. Generally speaking, we have found three forms of policy-driven containment – submetropolitan, unbounded metropolitan, and bounded metropolitan, and one

natural form.

**Table 14.5 Change in Anglo-African American Segregation, 1990-2000**

Containment Group		Control Group	
<i>Submetropolitan</i>		<i>Figure</i>	
Lexington-Fayette County KY	Figure	Knoxville TN	Figure
1990	51.8	1990	63.7
2000	47.8	2000	58.1
Change	-7.72%	Change	-8.79%
Nashville TN	Memphis TN		
60.9	1990	69.0	1990
	2000		2000
	57.0		68.7
	Change		Change
	-6.40%		-0.43%
Group (unweighted)	-7.06%	Group (unweighted)	-4.61%
<i>Unbounded</i>			
Minneapolis-St. Paul MN		Kansas City MO/KS	
1990	63.5	1990	73.2
2000	57.8	2000	69.1
Change	-8.98%	Change	-5.60%
Sarasota FL		Ocala FL	
1990	75.9	1990	76.3
2000	67.2	2000	80.0
Change	-11.46%	Change	-18.18%
Group (unweighted)	10.22%	Group (unweighted)	-11.89%
<i>Bounded</i>			
Portland OR/WA		Charlotte NC	
1990	66.2	1990	56.4
2000	48.1	2000	55.2
Change	-27.73%	Change	-2.13%
Sacramento CA		Bakersfield CA	
1990	57.1	1990	58.1
2000	56.0	2000	52.3
Change	-1.93%	Change	-9.98%
Group (unweighted)	-14.83%	Group (unweighted)	-6.06%
<i>Natural</i>			
Los Angeles CA		Dallas-Ft. Worth TX	
1990	73.6	1990	63.6
2000	67.6	2000	59.4
Change	-8.15%	Change	-6.60%
Phoenix AZ		Atlanta GA	
1990	51.6	1990	68.8
2000	43.1	2000	59.4
Change	-16.50%	Change	-4.65%
Group (unweighted)	-12.33%	Group (unweighted)	-5.63%
<i>All Contained Metros</i>	<i>-11.11%</i>	<i>All Uncontained Metros</i>	<i>-7.05%</i>
<i>Policy Contained Metros</i>	<i>-10.70%</i>	<i>Policy Match Metros</i>	<i>-7.52%</i>

Source: Data adapted from Lewis Mumford Centre for Comparative Urban and Regional Research, State University of New York at Albany. Web site <http://www.albany.edu/mumford/>.

**Table 14.6 Change in per capita personal income, 1989-1999 (\$000s)**

Containment Group		Control Group	
<i>Submetropolitan</i>			
Lexington-Fayette County KY		Knoxville TN	
1990	17.3	1990	16.5
2000	28.2	2000	25.6
Change	+63.01%	Change	+55.15%
Nashville TN		Memphis TN	
1990	18.4	1990	17.5
2000	30.5	2000	28.8
Change	+65.76%	Change	+64.57%
Group (unweighted)	+64.34%	Group (unweighted)	+59.86%
<i>Unbounded</i>			
Minneapolis-St. Paul MN		Kansas City MO/KS	
1990	21.8	1990	19.1
2000	35.3	2000	30.2
Change	+61.93%	Change	+58.12%
Sarasota FL		Ocala FL	
1990	23.9	1990	16.2
2000	35.7	2000	22.3
Change	+49.37%	Change	+37.65%
Group (unweighted)	+55.65%	Group (unweighted)	+47.89%
<i>Bounded</i>			
Portland OR/WA		Charlotte NC	
1990	19.1	1990	18.5
2000	30.7	2000	30.3
Change	+60.73%	Change	+63.78%
Sacramento CA		Bakersfield CA	
1990	19.8	1990	15.8
2000	28.7	2000	19.9
Change	+44.85%	Change	+25.95%
Group (unweighted)	+52.79%	Group (unweighted)	+44.87%
<i>Natural</i>			
Los Angeles CA		Dallas-Ft. Worth TX	
1990	20.5	1990	20.7
2000	28.3	2000	34.7
Change	+38.05%	Change	+67.63%
Phoenix AZ		Atlanta GA	
1990	18.1	1990	20.0
2000	27.6	2000	32.5
Change	+52.49%	Change	+62.50%
Group (unweighted)	+45.27%	Group (unweighted)	+65.07%
<i>All Contained Metros</i>	+54.51%	<i>All Uncontained Metros</i>	+54.42%
<i>Policy Contained Metros</i>	+57.59%	<i>Policy Match Metros</i>	+50.87%

Source: Data adapted from Regional Economic Information System, Bureau of Economic Analysis, US Bureau of Commerce

Does containment make a difference, and does that difference depend on the style? This preliminary assessment suggests that, on the whole, the more rigorous the containment style the better the outcome in containing the outward expansion of urban areas, shifting journey to work mode away from single-occupant vehicles, holding VMT in check if not reducing it, facilitating racial desegregation (among blacks and whites), and improving incomes. For the most part, naturally contained metropolitan areas enjoy similar outcomes but with decidedly tepid trends.

Despite the evidence provided in this preliminary assessment it would be inappropriate to conclude at this time that containment *per se* is an improvement over conventional development patterns. Needless to say, this is a field ripe for study.

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