CONTAINING SPRAWL

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1. Introduction

This paper discusses a variety of policy instruments (both regulatory and incentives driven) to contain sprawl, including urban growth boundaries, in the United States (specifically Oregon and Washington) and abroad (, in particular, the United Kingdom and France). It also discusses some of the key evaluation criteria for urban containment policies.

There are at least three interrelated concepts relevant to containing sprawl that are familiar to all urban planners (urban containment [narrowly defined], growth management, and smart growth) in the United States. However, different people attach different meanings to each of them, so comparing them is quite complicated. Some planners interpret urban containment (UC) strategies quite broadly, to include many of the growth management (GM) policy instruments, but the narrowest and possibly more precise definition would be a type of Urban Growth Boundary (UGB) to limit development inside. This could be the intended result of a specific policy (as in the prototypical Portland, Oregon case) or the incidental consequence of natural constraints (usually mountains and/or the sea, e.g. Los Angeles, Juneau [Alaska], Medellin [Colombia]). Urban containment (UC) strategies have been in place in one form or another for several decades both in the United States and abroad (in fact, there was a 3-mile radius containment perimeter introduced by King James I in 17thcentury England; Baer, 2002). The key idea is that imposing a defined boundary around a city beyond which development will be prohibited (at least up to some other jurisdiction) will

simultaneously prevent sprawl outside the boundary and promote higher density inside it.

Containing sprawl policies are much broader although sometimes, less often than not, they include an urban growth boundary (UGB) component. There have been some interesting attempts to develop multidimensional measures of sprawl (e.g. Galster *et al*., 2000, Torrens and Alberti, 2000), but most variables are highly correlated with density so it is reasonable to adopt the position taken in this paper: UC strategies are an attempt to influence densities at different distances from the urban core, and their success should be measured by how well they achieve this. A slightly broader interpretation would be to combine it with a farmland preservation ordinance and/or perhaps the transfer or purchase of development rights on environmentally sensitive land.

Growth management (GM) policies encompass a wide array of policy instruments, aimed at slowing growth (especially population growth) within a specific jurisdiction and achieving economic development, ensuring quality of life, and environmental quality, but also with the side objective or containing sprawl outside it. GM strategies can be adopted in different levels of jurisdiction. Many GM policies are adopted by cities (e.g. in California), and there are only twelve states that have adopted statewide GM legislation. Overall, the federal government does not play a key role. Its main involvement in land use regulation is via the Endangered Species Act, the Clean Air Act, the Clean Water Act, and the Bureau of Land Management (e.g. National Parks). In addition, some argue that federal policies promote sprawl, e.g. the Interstate Highway Act, the mortgage interest tax deduction. The strong role of local as opposed to central government in land use regulation is a major distinction between the United States and elsewhere (e.g. Canada, the United Kingdom, the Netherlands, Switzerland). The focus on nation-states and States and Provinces in this book needs to be careful about neglecting the local dimension that can be important even in States that not only have no legislation in place to contain sprawl but may even take a neutral stance on the issue.

Smart Growth (SG) has been defined in so many different ways that it defies a clear definition. However, Gerrit Knaap drew a very useful distinction when he pointed out that the Maryland Smart Growth legislative package

differed from previous growth management efforts by its emphasis on incentives/disincentives rather than on direct regulation. Another key feature of SG approaches is that they are more positive in focus than the negative connotations of GM and UC. They attempt to bring the different advocacy groups (e.g. environmentalists, developers, homeowners associations) together in reaching some consensus about the direction and scale of future development (Downs, 2001). Many SG policy prescriptions also promote New Urbanist (NU) principles.

The proponents of UC are mostly concerned about predominant low-density single family home development. Their rationale is that a UC strategy will promote urban compactness. If this works, all the virtues of the "compact city", e.g. reducing automobile trips, saving energy, improving the sense of a community, reducing inequalities, inner city revitalization, etc, can be ascribed to urban containment.

This UC approach has generated a polarized debate in the US planning profession. While the majority embraces the UC and compact city approaches to contain sprawl, the major objection has come from urban economists: single family housing is the preferred housing choice for the majority of Americans, affordable housing provision has been impaired, property values inside and outside controlled areas will be distorted, and UC policies have not so far resulted in more urban compactness. As demonstrated by Fulton *et al.* (2001), using the National Resources Inventory database for 1982-97, all major metropolitan areas (with the surprising exceptions of Los Angeles, Phoenix and Las Vegas), and including those with "strong" UC strategies in place, experienced declining densities. As an example, densities in the Portland metropolitan region declined by 11.3 percent. A qualification is a modest increase in density in the core county [Multnomah] because the metropolitan area analyzed included Clark County, Washington, which was not included within the UGB because it is outside Oregon).

2. Policy Instruments for Containing Sprawl

There are many policy instruments that are relevant to containing sprawl. Some (e.g. UGBs, farmland preservation ordinances) have a direct impact on containing sprawl, while the influence of others (e.g. developer impact fees,

infrastructure development controls, New Urbanism) is somewhat indirect. This paper concentrates more on the direct measures. Also, the scope of the book is limited to nation states (in Europe) and States and Provinces (in North America), so purely local jurisdictional instruments such as zoning will not receive much attention.

a. Urban Growth Boundaries. These are discussed in some detail both in the United States and abroad later in the paper. By delimiting a boundary somewhere within the jurisdiction (or cooperating jurisdictions), the goal is to confine development inside the boundary and thereby to achieve the parallel goals of increasing urban compactness and reducing sprawl. The UGB is usually combined with other policy measures with similar goals so that it is difficult to separate out the particular effect of the urban growth boundary. There are only two states in the US (Oregon and Washington) with strong State-mandated UGBs, although there are a few local examples (Boulder, Colorado).

b. Farmland Preservation Ordinances. A favored argument for urban containment strategies is to preserve prime agricultural land (Daniels, 1999). One issue is how much prime agricultural land is close to urban expansion areas. Another is the "highest and best use" question. For instance, there are concerns about the absorption of farmland in the Central Valley of California, but the problem is the demand for land for housing throughout California because of the very high house and land prices. One benefit of farmland preservation ordinances adopted by counties is that they may direct development to land that is unsuited to agriculture. A further question is: How much agricultural land does America need? The quantity of cultivable land has declined over the past three-quarters of a century, yet agricultural productivity has soared. Also, in several agricultural sub-sectors farmers are paid not to plant, and in others the government buys output to throw it away. Thus, the macro argument is unconvincing, although at the micro (regional) level there may be instances where a plausible case for farmland preservation can be made. For example, farming is one of the key economic activities in Oregon and Washington. So, farming receives substantial support from the State legislatures. Yet even in these two states, net farmland has declined significantly, although by less (proportionately) than in other key farming states.

c. Purchase and/or Transfer of Development Rights. This is an excellent market-based approach because it can simultaneously prevent sprawl in outlying areas and promote densification at close-in locations. In exchange for the commitment to forgo development at a site ("sending area", certainly open space, often environmentally sensitive land) a landowner (or land purchaser) will obtain additional development rights (e.g. density bonuses) at some alternative centrally located site ("receiving area"). A great many local and State jurisdictions have these programs with134 TDRs in 25 States (Pruetz, 2003), but unfortunately the market for them remains relatively "thin," i.e. too few participants (Bae, 2000, Machemer and Kaplowitz, 2002). There are several technical problems, such as identification of "receiving areas" and determining the appropriate "exchange rate" (e.g. acres of undeveloped land for square feet of additional development). One recent success story, however, can be found in King County, WA, which protected more than 90,000 acres of Snoqualmie Forest and is the largest TDR scheme in the country (King County, 2005). Tthe PDR/TDR approach remains a policy instrument that merits more attention on how to expand its use.

d. Ballots Prior to the Approval of Large-Scale Development Projects. A recent effort to slow down development popular in the outlying jurisdictions of Southern California is ballot initiatives that require voter approval for residential subdivisions above a certain size. This could be a major check on (especially peripheral) development because the "rational voter" hypothesis implies that opponents of development will be more likely to vote.

e. New Urbanist Principles. The New Urbanist (NU) agenda is much broader than urban containment strategies because it also encompasses neotraditional house/street design elements and ambitious communitarian objectivesHowever, it overlaps with its focus on higher dwelling densities and more compactness. New Urbanism, as a magnet for well known architects, offers design solutions that may be easily adaptable to a wider range of densification strategies, thereby increasing the competitiveness of high-density projects with the more traditional suburban subdivision housing. Song and Knaap (2004) found that the NU communities in the Portland region are more compact with better street connectivity than traditional suburban communities. As a direct contributor,

however, its impact is minimal because most sizeable New Urbanist developments are located on suburban Greenfield rather than at in-town sites. It is rare to find successful NU projects combined with transit-oriented development (TOD). One of the most well known rail examples is Orenco Station in Hillsboro, Oregon. The light rail system (MAX) connects the area (18 miles west of downtown) to downtown Portland. However, only 20 percent of residents use MAX at least twice a week (Bae, 2002), and the majority of residential sites is almost a mile away from the station*f. Priority Growth Areas.* The idea of directing development to often deprived, higher density locations is reflected in Maryland's Smart Growth programs, among others. The approach definitely falls under the SG heading because it emphasizes promoting development, but at specific locations where infrastructure exist. These areas have some affinity with the Enterprise Zone concept, except that they emphasize both residential *and* non-residential development. However, the criticism that Enterprise Zones merely diverted growth from elsewhere does not apply to Priority Growth Areas because that is what they are intended to do.

g. Critical Area Protection Measures. Many UC programs include measures to protect critical areas and environmentally sensitive lands (e.g. wetlands, species protection areas and stream protection areas), even within UGBs. Few would disagree that growth should, and can, be directed away from these areas. The debate hinges on the definition of critical areas. A common remedy in marginal cases is to release some of the land for development in return for funds from the developer to restore the remainder (e.g. the Bolsa Chica and the Ballona wetlands in Southern California).

h. Urban Core Revitalization Strategies. Although urban revitalization is often promoted as an antidote to sprawl, a sympathetic study by Downs (1999) found no measurable relationship between sprawl and indicators of urban core decline. Urban revitalization efforts, provided that they are primarily private sector financed with modest levels of public support, are worthy in their own right, regardless of their effects on sprawl. The problem is that this argument has been used too cavalierly to justify public subsidies for rail transit, sports stadia, convention centers and other costly projects. There has been some revival in a few downtowns (e.g. Seattle, Denver; Birch, 2002), but

probably the result of unusual downtown amenities than specific policies. . *Other Policy Instruments.* These are either less directly associated with containing sprawl or are primarily local government interventions. These include: relaxing traditional zoning restrictions (e.g. mixed use projects [combined office-residential buildings, live-and-work units], minimum density zoning, infill and accessory residential unit ordinances); developer impact fees (often as high as $30,000 per unit); moratoria on residential and/or commercial development projects; concurrency agreements (first embodied in Florida legislation), urban service districts and other schemes to limit development in the absence of advance or associated provision of infrastructure; public transit and non-motorized modes investments and promotion measures; and controls on "big-box" retail outlets, such as Wal-Mart. Also worth mentioning is the possibility of Federal action with regard to tougher immigration controls as a means of slowing down population growth and land consumption.

3. Oregon and Washington

A major distinction among UC strategies in the United States is between State and local approaches. Local zoning practices remain the most common and more traditional land use regulations. However, several states have developed Statewide programs, a few of them (Oregon, Washington, Tennessee) with urban growth boundaries (Pendall, 2004). Oregon was a path breaker in the State level approach (beginning in 1973 and focusing on the metropolitan level after 1980), and Washington adopted much of the Oregon program after 1990. The number of States with Statewide legislation is now about a dozen, although the three more populous States (California, New York and Texas) have never seriously considered this route. California has successfully introduced stringent single goal oriented state legislative actions, e.g. the California Environmental Quality Act (1970), the Coastal Zone Management Act (1972) and the California Clean Air Act (1988). However, land use and development regulations were primarily left in the hands of local governments. This resulted in more spread urban development because some communities on the periphery desire to grow (Moreno Valley in Riverside County) Recently, there have been several abortive attempts to promote Statewide legislation to contain sprawl; none have been successful. Thus, implementation has been dependent on actions

at the local level, often as a result of ballot initiatives, sometimes because of activist community opposition against specific development projects. California's strongly decentralized local growth management approach contrasts to the state-regulated Pacific Northwest. Public perception of California's growth has been overwhelmingly negative, even though some planning scholars disagree (Pendall, 2004; Richardson and Gordon, 2004). However, the discussion here focuses on Oregon and Washington, the cases best known to the author.

Oregon

Any discussion of Oregon must give some attention to Portland's Urban Growth Boundary (UGB), despite the fact that it is only one of many policy instruments adopted by Portland Metro to control sprawl. The UGB, established in 1979, has been a model for a sprawl containment policy, although it is much less restrictive than several adopted abroad (e.g. Greenbelt policies in the United Kingdom and South Korea, Greenheart in the Netherlands). Its requirement to keep a 20-year land supply reserve and its quinquennial reviews mean that it will never become a tight collar (Knaap, 2000). This suggests one of the reasons why densities lower than permitted densities in Urban Centers (See Metro's website "Centers" for definitions of this concept) have not been achieved. There is much more vacant land with larger parcels available within the Metro UGB (28 percent; 44,804 acres) than in the Urban Centers (18 percent or 1,243 acres; ECONorthwest, 2001). Another factor accounting for the relative weakness of the Urban Growth Boundary is the existence of a safety valve: one county in the Portland metropolitan area (Clark County) is across State lines, in Washington State (which did not adopt growth management until the 1990s). It was feasible for Portland lower-income workers to escape Portland (Oregon) house prices (Portland was #1 in house price inflation in the 1990s; National Association of Realtors, 2003, Downs *et al*., 2002) by moving across the river (Bae, 2004) andcontributing to rapid growth in the southern counties of Washington state. However, Phillips and Goodstein (2000) analyzed Portland's housing prices and suggested that the UGB made only a marginal contribution to higher housing prices, while Downs *et al*. (2002) detected a possible relationship only in the first half of the 1990s.

A second theme in Portland's strategy has been its emphasis on public transit: the development of a linear light rail system (MAX) supported by

feeder buses. Yet ridership is little higher than in other metropolitan areas (about the same as in Los Angeles; Richardson and Gordon, 2004) that are less vocal in boosting their rail systems, and even communities that are rail's creation (especially Orenco Station) do not rely on MAX as a major mode (Bae, 2002). Even if transit services increased by 50 percent by 2020, the transit share would increase only from 3.5 percent to 5.1 percent.

The third stool in Portland's strategy, and perhaps the most interesting, is its regional government, Portland Metro, a creation of the State. The only elected regional government in the United States, it stands as a beacon for those who believe that regional governance is the answer to sprawl's problems. Portland Metro, with seven elected councilors, oversees 25 cities in 3 counties (Clackamas, Multnomah and Washington), but its authority derives more from consensus than from the exercise of power (Abbott, 1997) Its practical powers have been exaggerated by outsiders, although it can require local governments to make their plans consistent with regional goals and can impose performance measures (such as minimum housing and subdivision densities) to conform to the 1996 Urban Growth Management Functional Plan.

There are a few empirical analyses on the impact of Portland's UGB. Nelson and Moore (1993) studied development patterns from 1985 and 1989 and observed inevitable low density development around the UGB periphery. 1000 Friends of Oregon (1991) found that planned target densities were achieved for multi-family housing, but that single family housing development stayed around two thirds of the target. Knapp (2000) reports that urban growth outside the UGB was much faster than the inside of UGB (29 percent vs. 1.2 percent per annum). Song and Knaap (2004)studied the most dynamic suburban county (Washington). They found an increase in single-family house density and improvements in internal connectivity but declining external connectivity and only a limited mixing of land uses; in other words, the results were mixed. A particularly interesting aspect of Portland's UGB is the spillover effect on Clark County, Washington State (Bae, 2004; Jun, 2004). Substantial suburban housing expansion took place between 1990 and 2000, 40 percent of it outside the UGB, with two-thirds of that in Clark County. If Portland has not yet succeeded in containing sprawl, it raises doubts about other metropolitan areas with weaker weaponry. Alternatively, it might suggest that State-mandated UGB regulation (even by

consensus) may not be the most effective approach. There is no doubt, however, that Portland remains a very attractive and aesthetically pleasing city. It has received many awards for innovative planning programs, albeit with a price tag. Yet, "(f)rom a distance, metropolitan Portland, Oregon, beckons as a planners' paradise" (Howe, 1998, p.67).

A more recent development is the passing in November 2004 of the ballot initiative Measure 37 based on the principle that "Governments must pay owners, or forgo enforcement, when certain land use restrictions reduce property value." Passed by an overwhelming majority of 61 percent of voters, this proposition applies retroactively as well as prospectively. As a statute rather than a constitutional amendment, it is less vulnerable to attack on constitutional grounds, yet (as expected) lawsuits have been filed on these grounds. If it survives, it could be a deathblow to Oregon's efforts to contain sprawl because public agencies will have to grant many waivers to regulations because they cannot afford to compensate for many thousands of claims that have been and will be filed.

Washington

Although (or perhaps because) Washington borrowed heavily from Oregon in designing its growth control program, it has not received the same degree of attention. Also, it was developed much later (the Growth Management Act was not passed until 1990 compared to the 1973 legislation in Oregon). Furthermore, it took several years for the programs to get underway. Jurisdictions were allowed up to four and a half years to develop their plans. For example, in Clark County adjacent to Oregon in the south of the State, and probably the second-ranked county in Washington subject to growth pressures (behind King County where Seattle is located), a Growth Management Plan was not in place until 1995.

Urban growth boundaries in Washington are called "Urban Growth Areas (UGAs);" nevertheless, the concept is the same. All urban and other fast-growing cities (with populations >50,000 and annual population growth rates >2.0 percent) and counties were required to establish UGAs and to prepare Comprehensive Plans and development regulations; other jurisdictions were permitted to do so. The UGAs, as in Oregon, had to include a 20-year urban land reserve and be reviewed decennially. However, Washington softened some of the more inflexible aspects of the Oregon

program. Local governments were given some latitude on how they developed and implemented their plans, e.g. setting their own services standards. The WA GMA requires "early and continuous" public participation in the preparation and updating of local comprehensive plans. Counties were allowed to develop certain types of development outside the UGA, i.e. to protect rural uses or to build new self-contained planned communities and master-planned resorts. Within the UGAs (at least in the four-county Puget Sound Region), some urban centers have been earmarked for higher density development.
King County adopted an innovative program (the "Four for One" program) permitting developers to develop land outside but adjacent to the UGA in return for deeding four times the amount to the county as permanent open space, usually in the form of a buffer between urban and rural land. The GMA also allows an appeals procedure to three State Growth Management Hearings Boards against the rejection of permit applications or for instances of non-compliance with the GMA. As in Oregon, there is a broad consensus of political support for the GMA, except among developers and landowners on the urban fringe just outside the UGA boundaries.

All lands under the Washington Growth Management Act are classified into three types: urban, rural and resource lands. The UGA does not cover all the area of the counties; typically, it covers 20-30 percent of the land area but a much higher proportion of the population, greater than 90 percent in King County. Up to 95 percent of building permits in the core county (King) are located within the UGA (Miller, 2000); 100 percent is impossible because of many "grandfathered" lots and subdivisions outside the UGAs permitted before the GMA plans were introduced. In addition, most local governments did not adopt their Comprehensive Plans until 1995, and there were many building permits issued between 1990 and 1995 on the fringe and outside the UGAs.

The GMA includes other elements, such as the protection of rural and natural resource lands, facilitating affordable housing and broadening the choice of transportation modes; these have had limited success. A particularly problematic component has been its concurrency provisions, ensuring that infrastructure is in place before development can be approved, at least in theory. However, in reality, developers must have a plan to provide necessary infrastructure within seven years of project construction, a

considerable weakening of the concept. Most decisions with respect to transportation are taken at the State level and a combination of a bitterly divided legislature and certain ballot initiatives (especially one drastically trimming the motor vehicle registration tax) delayed transportation investments for several years, and the lag in transportation infrastructure has been beyond doubt. Development has gone ahead, very rapidly in fact, by turning a blind eye to this concurrency lapse.

Another problem is the potential conflict between the Federal 1973 Endangered Species Act (ESA) and the State's Growth Management Act. In 1999 the Chinook salmon (six other salmon species are listed in the ESA) was declared a threatened species under the ESA. . There are many urban streams within the metropolitan area that are habitats for Chinook and further urban development within the UGA (and the associated paving) increases the urban runoff that pollutes these streams. There is no easy solution. One possibility may be to prioritize among these urban streams (e.g. the Bear Creek restoration in Redmond) and ensure that these are protected, but the connectivity of these streams makes it very difficult.

There are 21 designated urban centers (predominantly the major existing cities rather than new nodes) in King County. All have achieved their growth targets except for two lower-income urban centers in southern King County. The UGA appears to have reinforced the growth of the stronger centers in both the central city and the suburbs, possibly widening the gap between high- and low- income communities. However, jobs are more concentrated than housing, providing affordable housing has become problematic, and the battle for scarce open space is very intense. The State has strived to protect its rich natural endowment, although the State ordinance for critical area protection was introduced only in 2004.

4. Experiences in the United Kingdom and France

When it comes to land use decisions, governments play very different role in the United Kingdom and France compared to the United States. In general, European countries support a "top down" approach as opposed to America's "bottom up" stance. The central governments do most of the planning, relying on local governments as implementing agencies. Citizen participation is relatively weak. In the end, this results in urban forms

somewhat different from those of US cities (Sellers, 2004). Their urban built environments are more centralized at the core yet remain decentralized at the periphery.

The United Kingdom

Greenbelts in the United Kingdom were authorized under the Town and Country Planning Act of 1947 and codified in 1955. They are very extensive, accounting for 4.88 million acres of 13 percent of the land. For decades, the United Kingdom's Greenbelts were sacrosanct and very successful in preserving open fields, especially agricultural land. However, in recent years cracks have appeared, primarily because of the housing crisis, especially in the South East. This was given an equity twist because of the shortage of housing for "key" workers such as nurses, teachers and the police (London Assembly, 2001). There has, in consequence, been a modest invasion of the Greenbelt. Between 1993 and 1996 an annual average of 3,100 houses was built on Greenbelt land; this number increased by more than one-third in the following five years (also, between 1997 and 2001 agricultural land accounted for 38 percent of the land for new housing). The issue came to a head in 2002 with the announcement of a government housing plan (costing one billion pounds sterling), focused primarily on the South East. At the same time, the influential Royal Town Planning Institute requested a review of Greenbelt policy. The outcome remains open, although there is considerable speculation in the purchase of Greenbelt land that currently has no planning permission. The broader question is how well a regulatory regime can stand up under overwhelming pressures from market forces.

The other key characteristic of the situation in the United Kingdom is how to balance the dual emphasis on preserving agricultural land, Greenbelts and the rural way of life and on promoting urban regeneration (or the currently favored term "urban renaissance") of the core areas of the country's cities. At the superficial level, these goals are mutually supportive in the sense that encouraging people to stay in or return to the cities will relieve pressures on the rural periphery. At a deeper level, however, there is competition for scarce resources. Certainly, the members of the prestigious Urban Task Force (appointed by the Prime Minister) that recommended a heavy concentration on urban revival (Urban Task Force, 1999) were disappointed with the government's response. The eight major conurbations have more or less stabilized their populations since the mid-1990s after more than two

decades of decline (Williams, 2004), perhaps as a result of local revitalization efforts. The extent of the urban renaissance can be exaggerated by outsiders whose experience may be limited to London with examples such as Canary Wharf. Outside London the experience is much more mixed, e.g. the relative success of Manchester, Newcastle, Leeds and Cardiff compared with Liverpool. There may be a growing niche demand for urban living by singles and childless couples, but the call of the quasi-rural life remains strong especially for households with children.

The most striking market-oriented policy instrument (with at least indirect impacts on sprawl containment) is London's congestion pricing scheme introduced in February 2003. Traffic within the cordon area has been reduced by 18 percent, and some of the revenues are being used for public transport improvements (primarily buses). Considered an initial success, other cities in the UK are actively conducting feasibility studies (Banister, 2004). However, a concern is that the impact on Central London businesses might, in conflict with official policy, accelerate suburban retail and office sprawl.

A major difference between the United Kingdom and the United States is that the United Kingdom is a geographically small country with high population densities while the United States has the opposite characteristics. A second related consideration is the amount of recreational land. Open space is a treasured asset in the United Kingdom, whereas the United States with its extensive National and State Parks systems (managed by a federal agency, the Bureau of Land Management), not to mention many other recreational amenities, has a less urgent need to protect land in general, while devoting more resources to its precious national and regional assets. Another important difference is that the central government is the architect and implementing institution of UC policies in the United Kingdom whereas these policies in the United States are either State or local. Furthermore, United Kingdom's policies have been in place over a much longer period so that it is much easier to evaluate their degree of success.

France

For another European example, let us briefly consider France. Like many other European countries, the French case shows that sprawl is not solely an

Anglo-American phenomenon. For example, *aire urbaines* (metropolitan area) population increase by 1.31 percent per annum, but average densities declined by 3.2 percent per annum between 1968 and 1999 (Pumain, 2004). In contrast to the US case, central organizations such as DATAR (the French National Territorial Planning Agency) and the ministries in charge of public works, housing and transport are very powerful, while the local authorities (*communes*) are generally too small and fiscally weak. However, until very recently there were no notable efforts to contain sprawl. In fact, it could be argued that a set of "implicit spatial policies" reinforced sprawl tendencies.

Prud'homme and Nicot (2004) argue that France is an example of "moderate sprawl." However, over the past forty years the urban fringes have grown at a rate seven times faster than the urban agglomerations (Orfeuil, 2000). Yet the picture is more complicated: the rate of growth of population decelerated on the fringe decade by decade while it increased in the central cities (albeit from negative to marginally positive rates; Huriot, 2004, p. 165). With respect to the distribution of employment, Huriot (2004) argues that France represents a hybrid system, with more monocentricity than in the United States but combined with a multipolar system.

As we all know, living in central Paris is popular among Parisians, because it offers many amenities, e.g. built environment, political, historical and cultural institutions, entertainment facilities, and parks. Strong market forces draw people, especially the affluent, to its core areas. The experience of Paris differs from the rest of the country: income increases with distance in most French urban areas, but in Paris the less well-off live in the suburbs whereas the wealthy live centrally (cf. Manhattan). This pattern, in part, reflects the influence of housing policy, in particular, the promotion of single-family housing developments on the fringe for moderate-income households (Pumain, 2004). The new towns ("*villes nouvelles*") were a policy initiative intended to deconcentrate population from central Paris, but turned out to be the fastest growing employment centers, at least up the mid-nineties (Huriot, 2004). They are much closer to the CBD than the British New Towns so whether they have promoted sprawl or contained it is arguable

Transport policy, despite the promotion of pedestrian zones and tight parking controls in city centers, has reinforced sprawl via the creation of an

expensive and extensive interurban highway (freeway) network and the construction of ring roads around cities (Pumain, 2004). Up until very recently then, housing, employment and transport policy have (probably unintentionally) aggravated sprawl conditions. This has been worsened by the multiplicity of agencies (communes, the State and Public establishments of Inter-Community Cooperation) that has resulted in a highly fragmented pattern of spatial development.

Since the late 1990s, on the other hand, there has been a major turnaround in policy although it is too early to see results. Two laws passed in 1999 (known as the Voynet and the Chevenement laws) have strengthened supra-communal control via creating a type of metropolitan authority (*communautes d'agglomeration*). A third law, *Solidarite et Renouvellement Urbain* (SRU, the Solidarity and Urban Renewal law) in 2000 introduced SCOT (*Scheme de coherence territorial*). It promoted inter-communal cooperation, and one of its objectives was to control "peri-urbanization" (Pumain, 2004). In addition, the Clean Air Law of 1996 reinforced the *Plans de Deplacements Urbains* (originally created in 1983) to develop a less auto-oriented transport strategy, and the changed environment has triggered a new spurt of public transport investments, especially in the Paris metropolitan region (Ile-de-France). It is much too early to evaluate the results of these developments, but they do represent a major change in the French attitude towards sprawl. On the other hand, perhaps the approach overemphasizes the importance of institutional and regulatory reforms rather than financial incentives/disincentives to on the ground change.

5. Overall Evaluation of Sprawl Containment Strategies

What criteria should be used to assess the success of containing sprawl strategies? Certainly, the criteria should largely be in terms of the objectives of its proponents, both political and academic. Hence, the criteria include:

a. Increase in densities and progress towards the "compact city."

b. Reduction in automobile use and increase in the use of non-motorized modes.

c. Decline in rates of suburbanization and revitalization of the urban core.

d. Improvements in spatial equity.

e. Environmental protection

f. Popular support.

a. Increases in densities. The problem here is that while densities have increased slightly in some central cities in the United States, they have continued to decline in the metropolitan areas as a whole. The only exceptions in the long list analyzed by Fulton and Pendall (2001) are Phoenix (where a growth management initiative failed by a wide margin in 2000) and Los Angeles (a pattern quilt of pro-growth and no-growth jurisdictions, with most of the latter on the metropolitan periphery, especially in Ventura County).

b. Reduction in Automobile Use. Neither the 2000 Census (confined to commuting data) nor the 2001 National Household Travel Survey (that deals with all types of trips) indicate any reduction in auto use anywhere in the United States, and carpooling has continued to decline. However, there has been a minor uptick in public transit use (especially in the rail cities) especially since the late 1990s. Walking appears to account for a higher share of trips (comparing the 1995 NPTS with the 2001 NHTS data), but this is largely explained by changes in the survey (counting walking to transit as a separate commute in 2001). There has also been some evidence for higher rates in the use of non-motorized modes in newer higher-density communities (e.g. New Urbanist settlements), but these are usually "on-site" trips; "offsite" trips remain overwhelmingly by auto. But any minor changes have made little difference, if any, to the reliance on automobiles. Even in Europe where many governments have adopted much more aggressive pro-transit policies and stronger local land use controls (Nivola, 1999; Giuliano and Narayan, 2003; Richardson and Bae, 2004), the trends in automobile use are all upwards. Bertaud and Richardson (2004) indicate how difficult the task of reversing trends might be. Atlanta has 4.5 percent of trips by transit; Barcelona has 30 percent. To attain the transit ridership of Barcelona, Atlanta would need an additional 3,400 kilometers of rail and 2,800 new stations (Barcelona has 99 kilometers of track and 136 stations)!

c. Declining Suburbanization. The suburbanization of population and decentralization of jobs have been a dominating characteristic of the metropolitan landscape in the United States for more than fifty years. The trends have more or less continued unabated. A minor qualification is that the 1990s has witnessed some growth in downtown populations in several

large metropolitan areas (especially Denver and Seattle; Birch, 2002) and even a few cases of job revival. For example, Hughes and Seneca (2004) suggested that sprawl in the New York metropolitan region (31 counties) ended in the 1990s. Jobs and population grew in the core areas at the same rate as in the suburbs (population caught up in 1990, and jobs caught up in the late 1990s), reversing a pattern that began after World War II. This occurred against a background of improved regional growth: in the 1990s the regional population increased by 1.8 million compared with only 306,000 in the previous 21 years. The share of the urban core (the 5 boroughs and 3 inner New Jersey counties) of new building permits had declined to 15.7 percent in 1994, but climbed to 39 percent in 2002.

d. Improved Spatial Equity. If sprawl has widened the gaps between the central cities and the suburbs, it seems reasonable to argue that controlling sprawl will narrow income and other inequities. Certainly, promoting regional equity was one of the main principles of the Charter of the Congress for New Urbanism. Yet UC interventions appear to have had little positive influence on equity. By restricting land supply at core locations they have made the affordable housing problem more difficult. New higher density housing such as in New Urbanist communities (Eppli and Tu, 1999) or new condominium towers in certain cities command a price premium. Regional governance efforts, that would offer the opportunity for tax revenue sharing, have got nowhere. The impacts on the supply of rental housing have been minimal. From an equity perspective, the main beneficiaries from urban containment have been existing homeowners, often the wealthier ones. There may be an indirect argument (if sprawl control leads to urban revitalization, and this in turn encourages more better off households to return to the central city, then the regeneration of core tax revenues will permit a more flexible supply of services to the urban poor), but this has neither been well articulated nor documented.

e. Environmental Protection. A major planning objective of UC strategies has been the preservation of agricultural land and the protection of environmentally sensitive lands. Where these goals either have or are being explicitly built into legislation or programs such as in Washington State, the prospects look promising. Even under less favorable conditions, ordinances to direct development away from critical areas, implementation of TDR programs, and negotiations with developers to finance mitigation measures

(e.g. money for wetlands restoration in return for allowing, often a smaller than originally planned, project to go forward) can result in substantial returns. Thus, efforts on the fringe may be very successful. What is more problematic is what happens as a result of densification in more central areas. Unfortunately, more density means more congestion and (unless projects are designed with extreme care) infringement on increasingly scarce open space in or near the metropolitan core. There is a risk that the direct human costs in cities may outweigh the benefits to the natural environment in fringe areas. This is a major environmental challenge to efforts to contain sprawl.

f. Popular Support. Although preference surveys continue to show that households want a single-family home with a private yard, there is strong support (including at the ballot box) for growth control measures. One reason is that for existing homeowners successful sprawl measures (especially of the UC type) increase property values because of their effects on the supply of land. Another is the negative connotation associated with the word "sprawl," a schizophrenic view given that an increasing proportion of Americans live in suburban or exurban low-density neighborhoods. Sprawl containment measures are more popular in greenfield locations than at urban core sites where the abstract support conflicts with NIMBY objections to the traffic impacts of high-density infill developments. Nevertheless, in recent elections there have been hundreds of ballot initiatives on various types of growth control measures, and the proportion passing has ranged between two-thirds and three-quarters of the total. A limitation on success is the ability of developers to avoid UC controls by moving away. Although subscribers to UC goals continue to increase, there remain many jurisdictions that remain favorable to growth, especially the stimulus to job creation. For example, hitherto California has been a hodgepodge of pro-growth and anti-growth cities, while (at least until recently) Nevada has been the strongest pro-growth State in the West, a significant factor in its dynamic growth over the past two decades. State-level strategies plug some of the holes, but jumping across State boundaries (e.g. from California to Nevada) remains an option. The only sound method to avoid the "flight" problem would be a Federal UC policy, politically infeasible and possibly even unconstitutional in a country where local control over land use is a mantra that has been enshrined in Supreme Court decisions for decades.

6. Alternative Policy Approaches: Market Solutions.

Most UC strategies rely heavily on regulation. However, incentives/disincentives are not wholly neglected. Developer impact fees are an excellent example, although their scope is much wider than urban containment. They offer developers the option of making the profit-and-loss calculations to decide whether to proceed with their projects, far preferable to blanket prohibition. Transferable development rights also have significant market-oriented characteristics with the dual potential of preserving peripheral land from development and promoting higher densities within built-up areas. Road pricing might be able to influence travel mode decisions, although there are too few examples in place to answer this question. In fact, the market itself, with no explicit policy measures, may have more dramatic effects. Land prices are a good example. Those metropolitan areas with secular high and increasing land prices (such as Los Angeles) have higher densities while those with cheap land (like many in the Northeast and the Midwest) suffer from chronic sprawl.

The Maryland approach was one of the first to point in a different direction towards more market-oriented remedies, although with mixed success. The "Live Near Work" program, perhaps the most innovative of Maryland's initiatives, could have better designed. The aim is laudable, but a subsidy based on properties and their location would make more sense than a non-means tested income tax credit. Also, the very broad consensus in favor of SG principles frequently breaks down when the focus turns to specific sites: examples in Maryland include Charles County and Columbia where proposed developments were defeated by local public and political opposition and the sites were retained as green space. Another not surprising feature is that the Maryland smart growth prototype, perhaps more in terms of its goals than its policy instruments, has been widely adopted locally in other jurisdictions in States as disparate as Massachusetts, Texas and Kentucky. More surprising is that a detailed review of the website of the Smart Growth Leadership Institute established by Governor Glendenning after he left office appears to place much more emphasis on regulatory changes (e.g. revisions of ordinances and design standards) than on the market-based initiatives that characterized the original Maryland programs.

7. Future Research

A potential benefit from joint North American-European collaboration of this kind is as a stimulus to comparative research. My prior involvement in a joint enterprise of this kind (primarily dealing with the United States, the United Kingdom and France; Richardson and Bae, 2004) and this symposium in Annapolis in 2004 suggest that such an approach offers substantial research opportunities, based on both the similarities and differences of experiences and policies on the two continents. These include:

a. The relative importance of public policies and residential preferences in determining settlement patterns in different countries. Sprawl is more or less ubiquitous, although its specific characteristics may vary. The policy environments towards land use and transportation may be very dissimilar yet preferences for quasi-rural or exurban locations or for housing/settlement types may be more homogeneous. How does the mix between policies and preferences impact settlement patterns?

b. The governance structure with respect to land use varies between most European countries and the United States: in Europe there is a heavier reliance on central government control whereas local decision making dominates in the United States (even in those States that have mandated growth management/smart growth initiatives). Also, regional governance has made more headway in some Western European countries, e.g. recent legislation in France focusing on the supra-communal level, whereas there has been no progress on this front in the United States since the establishment of Portland Metro. How important is the level of government exercising control in determining the success of UC strategies?

c. Despite more active pro-transit policies and anti-automobile strategies, automobile use in many Western European countries is increasing faster than in the United States. What do these experiences offer to aid attempts to reduce automobile dependence? Also, market-oriented approaches (e.g. the London congestion pricing scheme, freight truck pricing in Germany and the recently imposed "green" tax on new automobile purchases in France) appear to be making more headway now in Western Europe than in North America (although discussions, and even pilot experiments, of distance-

based auto pricing are becoming more frequent). Are these policies transferable?

d. There is a need for more research into how sprawl containment measures can shift faster from the regulation to the incentives mode. This requires a more rigorous evaluation of the dis/incentives instruments that have been tried in both North America and Western Europe and a more imaginative approach to the design of new market-oriented measures. Concerns have often been expressed about political feasibility (consider the decades of delay before the beginnings of acceptance of road congestion pricing), but these should be a second-order issue in the research agenda. Priority should first be given to effectiveness and cost. One issue to be taken into account is that the more direct sprawl containment measures tend to be regulatory whereas pricing and tax instruments tend to have indirect, and possibly more problematic, impacts on sprawl.

e. Compact city strategies have a much longer history in Western Europe (e.g. the Netherlands since 1985). Does their evaluation offer any clues as to how the effectiveness of measures to promote compact cities in the United States might be improved? How can they solve potential problems at the micro-scale environmental level, e.g. air and noise pollution from roads. Can they deal with environmental justice and other social equity issues?

f. The United Kingdom has pursued a balance between "urban regeneration" and urban containment with limited success. Are these twin strategies desirable, are they compatible and do they offer prospects for implementation in the United States? Urban regeneration efforts in the United States have relied much more on private sector activity than in Western Europe, and no approximate equivalent to the National Heritage Fund source of public funding exists. A major research question is whether urban regeneration is a cost-effective strategy for achieving UC objectives.

g. A recent change in the discussions about sprawl is the cooptation of developers into support of higher density projects. In some regions, this has been prompted by high land prices but many regions in the United States (e.g. the Midwest) have relatively low land prices, and the spontaneous market incentive to increase densities is missing. However, there may be scope for tax discrimination in favor of high density projects, for example, in

developer impact fees. However, a major obstacle to the successful marketing of high density residential construction is with respect to design. Given the strong preference in the United States for detached dwelling with private yards, the key to successful densification might be substantial shrinkage in average lot size. There has been much more experience with smaller lots in Western Europe than in North America, and there may be considerable scope for the transfer of research findings in architecture and landscape design to facilitate development that combines high density with preserving privacy and providing amenities.

8. Conclusions

Any scorecard on the achievements of the stated objectives of containing sprawl strategies would indicate modest success. They have failed to achieve the "big picture" goals, such as increasing aggregate densities or reducing automobile use. However, there are some grounds for optimism. First, the gospel is spreading. There is a consensus among planners and most local politicians that the goals of containing sprawl are worthwhile, and the number of local jurisdictions with policy instruments in place is growing, perhaps rapidly (keeping count is difficult). Second, evaluating success depends on the prism chosen: the results appear much better on the micro scale (e.g. the individual infill project or a modestly scaled New Urbanist residential subdivision) than on the macro scale (e.g. metropolitan-wide results). Third, the shift from growth management and urban containment to "smart growth" (however amorphous its definitions) has meant a focus on guiding growth rather than stopping growth. Among other consequences, this has led to the cooption of many developers to the principles of smart growth. Developers have realized that the shared goal of higher densities means more profits (because of the high land cost component of house prices) and less political resistance from environmental groups.[1] Fourth, the smart growth philosophy has facilitated the change in emphasis from command-and-control regulations to market dis/incentives. This change

[1] To give an example from my home base, , there is a proliferation of new construction of $750,00,0 3,000+ ft^2 homes in the Eastside suburbs of Seattle on lots that are 8,000 ft^2 or smaller. On the other hand, Bellevue (a classic Edge City, once considered the epitome of profligate land consumption) now has a downtown that is being transformed into a panoply of high rise, mixed use projects.

offers promise because the costs of market-based disincentives are much more transparent than the costs of regulation.

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