TOWARDS SMART GROWTH? THE DIFFICULT IMPLEMENTATION OF ALTERNATIVES TO URBAN DISPERSION

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Résumé

Au cours des dernières années, le concept de la croissance intelligente (smart growth) a pris une place grandissante au sein des documents ayant trait à l'aménagement urbain. Ce concept reflète une forte insatisfaction à l'endroit des tendances actuelles en matière d'urbanisation, plus précisément de la pollution, des coûts élevés de développement urbain et de la baisse de qualité de vie qu'elles entraînent. L'article évalue la possibilité de mettre en place des mesures favorisant la croissance intelligente dans le contexte politique, économique et idéologique actuel. Il met de l'avant deux stratégies de croissance intelligente, qui tiennent compte des leçons émanant de l'échec, au cours des trente dernières années, des propositions visant une modification des formes urbaines. Ces stratégies tentent d'éviter toute confrontation majeure avec des groupes d'intérêt capables de prévenir leur réalisation. La première stratégie vise à étendre les secteurs urbains où la densité est élevée et l'usage de l'automobile faible à l'intérieur des secteurs de banlieue à faible densité. La seconde stratégie, pour sa part, tente de créer, au sein des nouveaux espaces urbanisés, des corridors de haute et moyenne densité, offrant des services de transports en commun de haute qualité ainsi qu'un environnement piétonnier accueillant.

Mots clés : croissance intelligente, urbanisme, étalement urbain, transports, politiques urbaines, Toronto.

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Abstract
The smart growth concept has recently achieved prominence within the planning profession. It represents a reaction to mounting resentment towards the adverse consequences of prevailing forms of urbanization: air pollution, high development costs and deteriorating quality of life. The article examines the possibility of implementing smart growth proposals within the prevailing political, economic and value environment. After drawing lessons from the lack of success of attempts at altering urban development over the last thirty years, the article proposes two smart growth strategies. To maintain their implementation potential and capacity to modify urbanization trends, the strategies avoid clashes with entrenched preference patterns and powerful interest groups. The first strategy consists in an expansion of the high-density, transit-oriented compact urban realm into the ambient low-density, car-dependent dispersed realm. The second strategy involves the creation of mixed-use, high-density corridors, hospitable to transit use and walking, within newly urbanized areas.

Key words: smart growth, urban planning, urban dispersal, transportation, urban policies, Toronto

Introduction

Since the late 1990s, smart growth has occupied increasing space on the planning scene. The smart growth concept calls for forms of urbanization that are more compact, transit- and walking-friendly, conducive to high-quality urban life, and less environmentally damaging and infrastructure hungry than present urbanization patterns. Above all, it is sprawl, characteristic of North American urban growth since World War Two, that is targeted by the smart growth movement.

Given the succession over the last thirty years of planning models promoting alternative forms of development, and their weak effect on predominant urbanization tendencies, it is difficult not to be more than a little cynical about the smart growth concept. It is indeed legitimate to wonder if smart growth is more than yet another planning fad critical of prevailing practices, with scant capacity to alter ongoing urbanization trends; if smart growth holds the potential to usher in a long awaited reorientation of contemporary urbanization trends. The mounting literature on smart growth chronicles and praises smart growth initiatives and their positive environmental, financial and quality of life effects on urbanization. In most cases, however, these achievements have failed to reach the scale needed to reorient urban developement trends.

The purpose of the paper is to trace the origins of the smart growth concept by situating it among the planning movements of the last three decades that have been critical of sprawl, and explore its capacity to alter the trajectory of contemporary urbanization. The circumstances that account for the persistence of low-density and car-oriented urbanization in the face of repeated critiques and proposals of alternative development patterns will help estimate the likely urban impacts of the smart growth concept. I argue that to alter prevailing forms of urbanization, smart growth initiatives must avoid confronting head on the major interest groups and values underpinning present types of development. Because of tight budgets, such initiatives must equally refrain from engaging in prohibitively expensive public sector interventions.

Smart Growth and its Context

Smart growth is primarily a reaction to the sprawling form of urbanization, characterized by low overall densities, a rigid specialization of land uses and a near total dependence on the automobile, which has prevailed since World War Two. (For recent indictments of urban sprawl, see Benfield, Raimi and Chen 1999; Cieslewicz 2002; Downs 1992; Ewing, Pendall and Chen 2002; Fodor 1999; Gillham 2002; Kunstler 1993; Sierra Club 2000; Williams 2000.) The concept underscores the adverse consequences of this type of development: air pollution and large-scale production of green-house gases; congestion and overall longer time spent in the car, responsible for quality of life degradation and rising business costs;[1] the high expense of providing and maintaining infrastructures in low-density and automobile-dependent urban environments; and the loss of abundant rural and natural land due to a rate of urban land consumption that is far in excess of population growth (Benfield, Raimi and Chen 1999; Bolbier 1998; O'Meara Sheehan 2001). If some regions' residential density is on the rise due to escalating land costs and if strict planning controls can successfully contain leap frogging, other aspects of sprawl have proven to be more stubborn. There is indeed no sign of a reversal of intense functional specialization, growing levels of automobile dependence and increasing land consumption by non-residential uses (Bourne 2001).

The origin of the concept can be seen as a response to the no-growth movement, which gained momentum in the 1990s in California and other US jurisdictions facing intense demographic pressures (ABAG n.d.; Fodor 1999, 27-28; Pendall, Martin and Fulton 2002, 14). No-growth reflected the view shared by increasing numbers of residents from such jurisdictions that the disadvantages of urban expansion outweigh its advantages. Growth was increasingly pictured as costly and detrimental to quality of life because of its

adverse environmental impacts and the deterioration in traffic conditions it causes (Baldassare and Wilson 1995; 1996).

The late 20th century change of attitude towards growth deserves attention. Historically, cities competed eagerly to attract development. Development was seen in a positive light. For example, in his *USA* trilogy, John Dos Passos (1937) conveys the eager anticipation with which the rapid expansion of New York City over the late teens and 1920s and its overtaking of London as the world's largest city were greeted. Then growth meant more choice and opportunities in a downtown that was undergoing accelerated horizontal and vertical expansion, and that maintained good quality public transit connections with the enlarging metropolitan area. Nourished by urban growth, the core area gained in density and sophistication with more and better stores, restaurants, theatres, galleries, museums, hospitals, etc. This was growth by accretion. Metropolitan expansion brought an increase in downtown activities, which in turn raised the range and quality of choices available to the region's residents, most of whom were regular downtown visitors.

Things changed with post-World-War-Two suburbanization. Suburban portions of metropolitan areas increasingly catered to their own employment, retail, educational, health care, entertainment and recreational needs. As suburban development came with a full range of non-residential land uses, it contributed little to downtown expansion. If anything, in most places the effect on the downtown was negative as suburban retail, employment and recreational activities siphoned off life from the core. The suburban pattern of development can be qualified as development by replication. As a new suburban area pretty much reproduces offerings present in other such areas, it adds little to the range of choices within the region. In this context, a new suburban development brings few advantages to the residents of a metropolitan region. One notable exception to this rule is the employment it adds to the region's job market, provided traffic congestion does not challenge too seriously the metropolitan-scale integration of this market. Still, with so few rewards associated with growth, it is not surprising that the attention of residents turns to its environmental, financial and quality of life downsides (Fodor 1999, 38-59).

These circumstances explain the attitude the smart growth concept takes towards development. It does not aim at halting, or even slowing down, growth. It rather purports to alleviate its adverse consequences so as to enhance its environmental and financial acceptability, while raising its appeal from a quality of life perspective. The message is thus that growth need not be as unattractive as it is, that there are alternative forms of development that can make growth more acceptable (CSGISCC 2002, 11).

Recommendations found in the smart growth literature and in policy documents inspired by the concept include the channelling of present and future development to existing urban centres; the encouragement of infill development and of a reuse of brownfield sites; the promotion of compact and mixed-use forms of development; the fostering of land-use patterns that support walking, cycling and public transit use; an enhancement of public transit funding; the shifting of some freight movement from trucks to rail; and the protection of green space within and around cities (CSGISCC 2002, 8-9; Freilich 1999; Gilham 2002, 251-257; Katz 1999; 2002; New Jersey 2001, 5; Pierce 1999; Pim and Ornoy 2002, 15). In essence, smart growth advocates forms of development that abate land and infrastructure requirements, and are less car reliant than present patterns.

Beside its environmental benefits, smart growth holds the potential of bringing about quality of life improvements in the form of shorter journeys and a broader range of life-style options. Further, reduced infrastructure requirements would lower public sector urbanization expenses with advantageous fiscal and potential economic development consequences (Blais 1996; Downs 1999; Marchand and Charland 1992).

At present, the smart growth concept enjoys a broad base of support, cutting across political affiliations (APA 2002). By addressing the environmental, financial and quality of life problems associated with urban development, the concept touches different chords (Downs 2001; Shore 1995). In a climate of growing disillusion about sprawling urbanization, smart growth puts forth the highly optimistic assumption that a more informed and thoughtful approach to development will yield on its own considerable advantages without causing anyone much grief (Bolbier 1998). As a US legal expert on urban development put it: "In combating sprawl, it is not necessary to give up the American dream; it must only be slightly revised" (Freilich 1999, 321). Seen in this light, smart growth appears to involve a readjustment of urban development rules that does not pit interest groups against each other; it is depicted as a way of improving urban development while reducing resource requirements.

Yet critics see through this apparent consensus. They target the wide variations in the understanding of smart growth, which stem from the fact that the concept is a compromise between environmental protection, quality of life, infrastructure expenses and urban development (see Bourne 2001). Actors with highly divergent urban agendas invoke smart growth to justify their stands on various urban issues and in doing so multiply interpretations given to this concept. For example, environmentalists champion radically altered urban forms, where energy consumption and waste production are drastically reduced. At the other end of the spectrum is the liberal use of the smart growth label by

municipal administrations and developers alike, who affix it to virtually any change to urban areas.

In this paper, I subscribe to a definition of smart growth that concentrates on the promotion of land use-journey relationships that lower land use consumption and automobile use, while encouraging walking and public transit patronage. The next two sections raise another issue confronting smart growth: The possibility that it will attain its objectives when prior, and closely related, perspectives have failed to do so.

Anything New Under the Planning Sun?

Smart growth needs to be situated within the progression of critical planning thinking on urban form in order to understand the nature of the concept and assess its capacity to modify urban development. Smart growth indeed belongs to a strain of planning reflections disapproving of prevailing planning practice and urbanization trends. To chart the evolution of planning concepts questioning prevailing urban development and advancing alternatives to this type of growth, I offer a brief overview of planning documents addressing urban form issues at the scale of the entire Toronto metropolitan region.

The first comprehensive alternative to prevailing metropolitan development tendencies was introduced in the 1970 Toronto-Centred Region report (Ontario 1970). This planning initiative was motivated by the anticipation of brisk demographic and economic growth (the forecast was from 3.6 million residents in 1966 to nearly 8 million by the year 2000). The report predated the strong influence that environmental awareness was about to exert on the discourse of official planning documents. The sole environmental concern played up in the report was the preservation of agricultural land. The other major preoccupation guiding this planning exercise was a desire to rein in the transportation, water supply and sewer infrastructure expenses required to absorb the forecast expansion. Rural land preservation and reduced infrastructure costs were to be achieved through the adoption of a linear urban form stretching along the shores of Lake Ontario. Limits were to be placed on urbanization north of a green belt delineating this urban form. Proximity to Lake Ontario would lower water provision and sewer expenses and a linear urbanization would encourage the development of efficient transportation corridors and thereby keep down transportation infrastructure and servicing costs. But provincial government sensitivity to pressures from municipalities located outside the zone of intense urbanization and developers operating in these municipalities provoked the demise of the Toronto-Centred Region vision. The death knell was sounded when, in stark contradiction with this vision, the province proceeded in 1973

with the York-Durham trunk sewer system, which opened the area north of Metro Toronto to development (Sewell 1993, 209-212).

The second wave of interest in Toronto region (by then referred to as the Greater Toronto Area) urban form took place from the late 1980s to 1995. Unlike the Toronto-Centred Region report, documents produced over this period were profoundly influenced by the environmental movement, in particular the sustainable development concept. The main message to emerge from these documents was that post-World-War-Two urban development was wasteful of land and energy, and damaging to the environment due largely to rising automobile use (Paehlke 1991). Concern was also raised about the high servicing costs of car-dependent, low-density urbanization where land use is highly specialized. Planning documents proposed a denser urban form where less segregated land uses and high-quality public transit would encourage walking and transit patronage while reducing automobile dependence.

Under pressure from the provincial government, the different Greater Toronto Area planning jurisdictions subscribed to a multi-nodal vision, framed in a consultant study exploring desirable GTA urban forms (IBI Group 1990a; 1990b). This model allocated most of the growth to suburbs. But rather than fuelling sprawl, growth was to be structured around nodes, described as compact multi-use centres conducive to walking and transit patronage (OGTA 1991a; 1991b). The urban land consumption and transit and walking modal share goals of this strategy were in harmony with sustainable development principles.

As the nodal and transit vision became a feature of all GTA official plans prepared over this period, a total of 47 nodes were designated and regional governments adopted highly ambitious public transit use targets. Halton Region's objective was a twenty percent transit modal split by 2011; Peel Region aspired to reach such a percentage by 2021; York Region's target was 33 percent in thirty years; and Metro Toronto set a peak hour goal of fifty percent for public transit, walking and cycling (Miller, Emereau and Farrow 1997, 23).[2] The 1996 twenty-four hour transit modal split (local transit and GO services) values were three percent in Halton, seven percent in Peel and six percent in York (see Table 1). That same year, peak hour transit and walking/cycling proportions of all journeys made by Metro Toronto residents were respectively 28 percent and 11 percent (Transportation Tomorrow Survey n.d.).

Yet, for all this apparent commitment to a nodal and transit vision, conditions for successful implementation failed to materialize. First, with the 1995 Conservative Party victory, the province lost much of its interest in metropolitan-scale planning. There was, as a result, far less incentive for regional and local administrations to pursue actively the nodal and transit strategy. This was especially the case since the provincial government never allocated the sums

Table 1: Percent Modal Splits, Greater Toronto Area (24 hours, trips made by residents of the regions)

GTA Regions	Auto Driver	Auto Passenger	Local Transit	Go	Walk and Cycle	Other
Metro Toronto						
1986	53	13	25	0	7	1
1991	54	14	22	0	8	1
1996	53	15	22	0	8	1
Durham						
1986	69	17	3	2	6	4
1991	72	16	2	2	5	3
1996	71	16	3	2	6	3
York						
1986	69	14	6	1	5	5
1991	71	14	6	1	5	4
1996	70	16	5	1	5	3
Peel						
1986	68	15	6	2	7	3
1991	68	16	5	2	6	3
1996	69	16	5	2	5	3
Halton						
1986	71	15	2	2	6	3
1991	73	13	2	3	6	3
1996	73	16	1	2	5	3

Source: Transportation Tomorrow Survey (n.d.)

required for anticipated transit projects, which were essential to the strategy. (The province did fund one such project, the Sheppard Line, arguably the line on the Toronto Transit Commission subway system expansion plans with the least potential impact on urban form.) Another difficulty stemmed from an over-designation of nodes within the GTA. This over-supply will make it difficult for individual nodes to reach the critical mass needed to function as major destinations and justify frequent and high-speed transit services.

Incapacity to meet planning objectives formulated over these two periods can be imputed to a challenging fiscal climate, political and economic events that followed the formulation of the plans and the entrenchment of urban dispersion. In both the Toronto-Centred Region and the GTA plans, metropolitan-wide models fell victim to government priority shifts, associated in the case of GTA plans with a change of provincial administration. Economic cycles also played a role. The metropolitan growth management concepts were formulated in periods of accelerated development when sensitivity to its adverse consequences ran high. But ensuing recessions redirected attention from growth management to the stimulation of economic activity and starved the public sector of the sums needed to proceed with the proposals voiced in planning documents (Natural Resources Defence Council 2002).

I would argue, however, that the most pernicious obstacle to alternatives to prevailing urban development is the entrenchment of the dispersed urban form, defined by overall low density, a decentralized activity distribution pattern and a near total dependence on the automobile (Bunting and Filion 1999). Especially in sectors built since the early 1970s, residential and employment densities are far too low to support the type of transit service that can compete with the automobile (see IBI Group 2002). What is more, the scattered pattern of activities in the outer suburbs (areas developed since 1971) makes it highly impractical to rely on transit to reach most destinations. In these circumstances, it is not surprising that only the very few outer suburbanites without access to an automobile will use local public transportation (by opposition, GO commuter services attract mostly non-captive users, but nearly exclusively riders who have downtown Toronto as a destination). This explains the minimal local transit modal shares registered in non-City of Toronto portions of the GTA. Even the few islands of mixed-use development intended to encourage transit use, and thus contribute to the reaching of modal split objectives, do not perform as well as intended. The three most developed mixed-use suburban centres do not post a level of transit use that is substantially above that of other locations within their portion of the metropolitan region – inner or outer suburb – and fail to generate work destination walking journeys from surrounding neighbourhoods, as downtown Toronto does successfully (Filion 2001).

Urban dispersion is grounded in systems of interrelated causation, which resist modification. I will briefly describe three such systems: the relation between generalized reliance on the automobile and dispersed land use; expectations and preferences shaped by this type of environment; and interests vested in the production and preservation of dispersed urbanization.

Generalized automobile use has profoundly modified the accessibility and activity distribution characteristic of the traditional transit-based city. The intense concentration of activities in the core, the unchallenged transit nexus, has been replaced by much smaller clusters at the numerous points of equivalent automobile accessibility generated by expressway and arterial road networks (Rowe 1991). Moreover, liberated by the spread of car use from the need for transit accessibility and inter-connectivity within pedestrian-friendly environments, activities, retail in particular, can give precedence in their location decisions to other factors such as land availability and cost. This further explains the scattered distribution of activities in suburban environments.

The presence of large amounts of vehicles dictates a form of development that requires ample parking provision (for economic reasons, mostly surface parking in suburban environments), which depresses densities and produces environments that are inimical to pedestrians. Heavy reliance on the automobile is also instrumental in the rigid separation of land uses that defines the suburban landscape. Not only does car use enable such segregation, but residents' aversion to traffic provides further incentive to separate land uses. Activities that could otherwise blend easily with housing are not tolerated in residential areas when they are important traffic generators. From a transportation perspective, the overall effect of car-oriented development is to reduce the effectiveness of, and reliance on, other modes. Distances become too long and the environment insufficiently diverse and stimulating, and too suited to the car, to encourage walking (Gehl 1987; Untermann 1984). The combined effect of low density and of a dispersal of origins and destinations makes it impossible to operate quality transit services. Lately, the mushrooming of 'big box' stores and 'mega' supermarkets, and the resulting depletion of retailing accessible on foot or by transit has further accentuated automobile dependence (Jones and Simmons 1993).

The second system of interrelated causation concerns the role the expectations and preferences of agents involved in the production and consumption of the built environment play in the production and evolution of urban dispersion. It is in the suburb, where they have been raised, that the values of a majority of North Americans have been shaped. As expected, many of them aspire to reside in the type of environment with which they are most familiar. It is noteworthy that a majority of these individuals value green space,

a feature of suburban areas, more than 'urbanity' (defined as proximity to commercial streets and other pedestrian-oriented clusters of activities) which characterizes the inner city. Suburbanites cherish most aspects of their living environment and have grown accustomed to its less attractive sides, retail strips for example (Filion, Bunting and Warriner 1999). In the same vein, they have accepted full reliance on the car as an inescapable dimension of suburban life. The development industry both responds to and reinforces the predilection for suburban living by respecting suburban norms of development while adding innovative features to entice customers. Over the last decade, the tendency has been towards homes offering more living space.

Vested interests, the third system of interrelated causations discussed here, further contribute to embed dispersed growth. The proliferation of the NIMBY syndrome evidences the readiness with which residents defend the low density and functional segregation of their neighbourhoods. Another influential, if generally unmobilized, interest group is the car-using constituency. Logically, in a suburban setting the brunt of available transportation investments is directed towards the needs of motorists, rather than those of comparatively much smaller numbers of transit patrons, cyclists and pedestrians. The development industry too plays a major role in the perpetuation of urban dispersion. It is a well known fact that, despite the need to install infrastructures, it is easier to develop greenfields than redevelop already urbanized areas. On the periphery developers can take advantage of the presence of motivated land sellers, pay less for this land than within the built-up perimeter and reap economies of scale in the erection and marketing of entire subdivisions. These benefits lower development costs and broaden potential markets.[3] The interest of developers for outward development is also tied to their ownership of large tracts of land at the fringe of urban areas. Another stimulus of dispersed urbanization at the edge of metropolitan regions is the fiscal motivation of outlying municipalities. Eager to attract fiscally lucrative development and thus expand their property tax base, these localities tend to be overly accommodating to prevailing growth patterns. For fear of foregoing lucrative developments, they are loath to adopt or enforce regulations promoting alternatives to dispersion.

Smart Growth and the Art of the Possible

This section addresses two questions: Are we entitled to be more hopeful about the outcomes of smart growth than of those of previous attempts at altering urbanization tendencies? If so, how can a smart growth strategy avoid the obstacles that have scuttled earlier proposals? Over the last decade, deficit and tax reduction priorities combined with the rising share of provincial budgets absorbed by health care precluded the extension of public transit services of a quality sufficient to entice automobile users and thereby alter the modal split.

What is more, the changes in urban development contemplated in some of the planning documents would have required the adoption of coercive regulations. However, because of their likely clash with interest groups as well as with the preferences of a large segment of the population, these regulations would have exacted a heavy political toll, probably beyond what most governments are willing to incur. Furthermore, insufficient coordination capacity confined alternative developments to a scale beneath what is needed to produce the desired smart growth impacts. This is the case of mixed-use developments which face, as seen, difficulties in reaching public transit use objectives (Cervero 1989; Filion 2001). Predictions by experts and available evidence suggest that neo-traditional developments will encounter similar problems (Crane 1996a; 1996b; Friedman, Gordon and Peers 1994).

Such an implementation context rules out a full reversal of urbanization tendencies resulting in a substitution of a medium- to high-density, transit- and walking-oriented form of development for sprawling, car-dependent suburbanization. The constituencies that are attached to various forms of suburbanization, for reason of habit, preference or economic interest, enjoy such political clout that the possibility of a thorough transformation of urban development receives little attention from governments (Dale 1999). Realistically, smart growth strategies must then content themselves with the more modest environmental, economic and quality of life benefits accruing from less ambitious, but more feasible, interventions. Skilful smart growth strategies will seek to maximize rewards achievable within a range of policies that enjoy some compatibility with the prevailing implementation context.

Two strategies targeted at dispersed portions of urban areas can yield some of the advantages sought by the smart growth concept at a level sufficient to affect the overall performance of the metropolitan region, while circumventing barriers to their implementation.

In order to set the conceptual groundwork for the first strategy, it is necessary to picture the GTA (like any large North American metropolitan region with a dense inner city and a developed transit system) as composed of two realms, one concentrated and the other dispersed (Filion 2000). The concentrated realm registers a non-automobile (that is, public transit, cycling, walking and other) modal share of 25 percent or more. It coincides with the portion of the metropolitan region that was built before World War Two, even if much of this area has since been redeveloped. The built environment of the pre-war period conforms to smart growth principles. Density far exceeds that of the remainder of the metropolitan region (net residential density is 12,234 persons per km^2 in the area covered by the old cities of Toronto, York and East York, 6593 in Etobicoke, North York and Scarborough, and 5304 in the remainder of the

built-up area of the Toronto census metropolitan area).[4] In addition, land use patterns are largely mixed – residential neighbourhoods are traversed by traditional, pedestrian-oriented commercial streets – and the availability of public transit services surpasses many times that of the dispersed realm (2257 transit seats per hour and per km^2 in the sector defined as the old cities of Toronto, York and East York vs. 226 in the remainder of the Toronto metropolitan region built up area).[5] The concentrated realm also stretches along subway lines into parts of the metropolitan region that were developed in the post-war period. While Toronto post-war land use patterns are mostly of a dispersed nature, a number of subway stations within this portion of the metropolitan region have been foci for high-density redevelopment. By contrast, the dispersed realm, which includes most areas developed between the end of World War Two and 1971 (the inner suburbs) and all those urbanized since 1971 (the outer suburbs), registers a modal share for non-automobile journeys under 25 percent. In reality, dispersed-realm non-automobile modal shares are generally considerably lower than 25 percent (see Table 1).

The strategy would involve encouraging concentrated realm inroads into the dispersed realm, thus creating, within car-oriented suburbs, urban districts that approximate smart growth criteria. This effect can be attained by extending the subway system into areas that either already register high densities or present a strong potential for intensification. In this sense, the strategy would take the path of least resistance to stretch out the compact realm by availing itself of trends that are already in place or can easily be initiated. By providing conditions assuring that density increments will translate into higher transit use, it would prevent car-oriented forms of intensification that would further feed traffic congestion.

One possibility would be a four-kilometre Spadina Line extension to York University. This line would require little, if any, tunnelling and would run through areas with significant redevelopment potential: Downsview Airport and the southern edge of York University campus. Another would be an extension of the Yonge Line through sectors that are already showing clear signs of residential intensification. A more expensive proposition would entail a ten-kilometre Bloor/Danforth subway line extension to Mississauga's Square One shopping mall, most of which could run above ground along an existing rail corridor with redevelopment potential. Mississauga City Centre (Square One Mall and the surrounding area) represents an important retail and employment concentration and is bordered by high-rise residential developments (see Figure 1).

Proposals to extend subways are not new (they broadly correspond to plans on the Toronto Transit Commission's wish list), but they have been put off

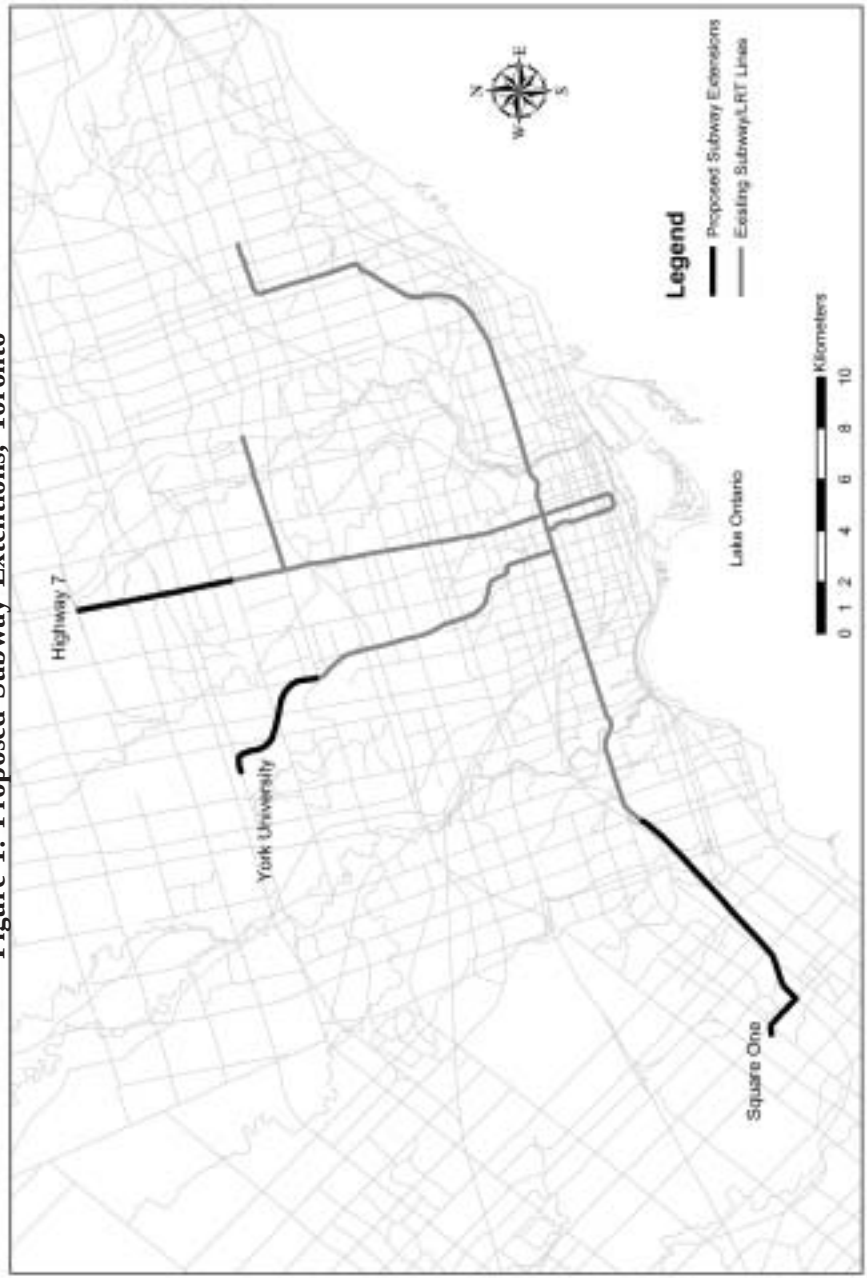


Figure 1: Proposed Subway Extentions, Toronto

repeatedly for lack of adequate funding. The strategy proposed here is thus at the limit of the present implementation context. It offers means of generating important smart growth returns for the sums invested, while underscoring the necessity to redirect funding towards alternatives to peripheral and highway development in the Toronto metropolitan area.

To achieve smart growth at a metropolitan scale, it is imperative to address peripheral growth patterns, the intent of the second strategy.[6] Two preliminary observations are critical to the framing of a smart growth greenfield development strategy. Firstly, there appears to be profound attachment to the single family home and conventional forms of subdivisions and it is unlikely that a majority of households will reverse this preference pattern in the foreseeable future (Leung 1993; Mary McDonnaugh Research Associates 1994). Secondly, notwithstanding such preferences, it is a mistake to depict recent residential developments as uniformly low density and composed exclusively of single-family homes. Newly urbanized areas register sharp variations in density mirroring the presence of different housing types: from very high-density groupings of high-rise apartment buildings to very low-density estate single-family housing developments, with low-rise apartment buildings, townhouses and single-family houses on various lot sizes in between. Yet, the presence of high- and medium-density developments has negligible impact on modal split. As illustrated by the situation prevailing in newly developed peripheral areas, where public transit and walking levels are uniformly low, density is not a sufficient condition to raise the proportion of non-automobile journeys (e.g., Badoe and Miller 2000; Boarnet and Crane 2001; Cervero and Kockelman 1997; Pushkarev and Zupan 1977). To achieve this outcome, density must be arranged in appropriate fashions, for example, in large enough clusters and located in areas well served by public transit.

The strategy would consist of channelling high-density residential developments and workplaces to corridors, each of which would be organized around a multi-purpose boulevard (see Figure 2). Retail and institutions would also be directed to these corridors. The boulevards would be composed of rights of way for high-speed transit services (bus rapid transit or light rail transit), lanes for road traffic, bicycle lanes and wide sidewalks (for a depiction of such multi-functional boulevards, see Calthrope 2002). For aesthetic purposes, these different functions could be separated by rows of trees in a Parisian fashion. Sidewalks would be made attractive to pedestrians with continuous façades. Even structures containing big box stores and retail malls could be adapted so that they would front on the boulevard line and present a facade that is stimulating to pedestrians. Where economically feasible, parking would be underground or in multi-level structures, and in all cases would be accessible from back streets

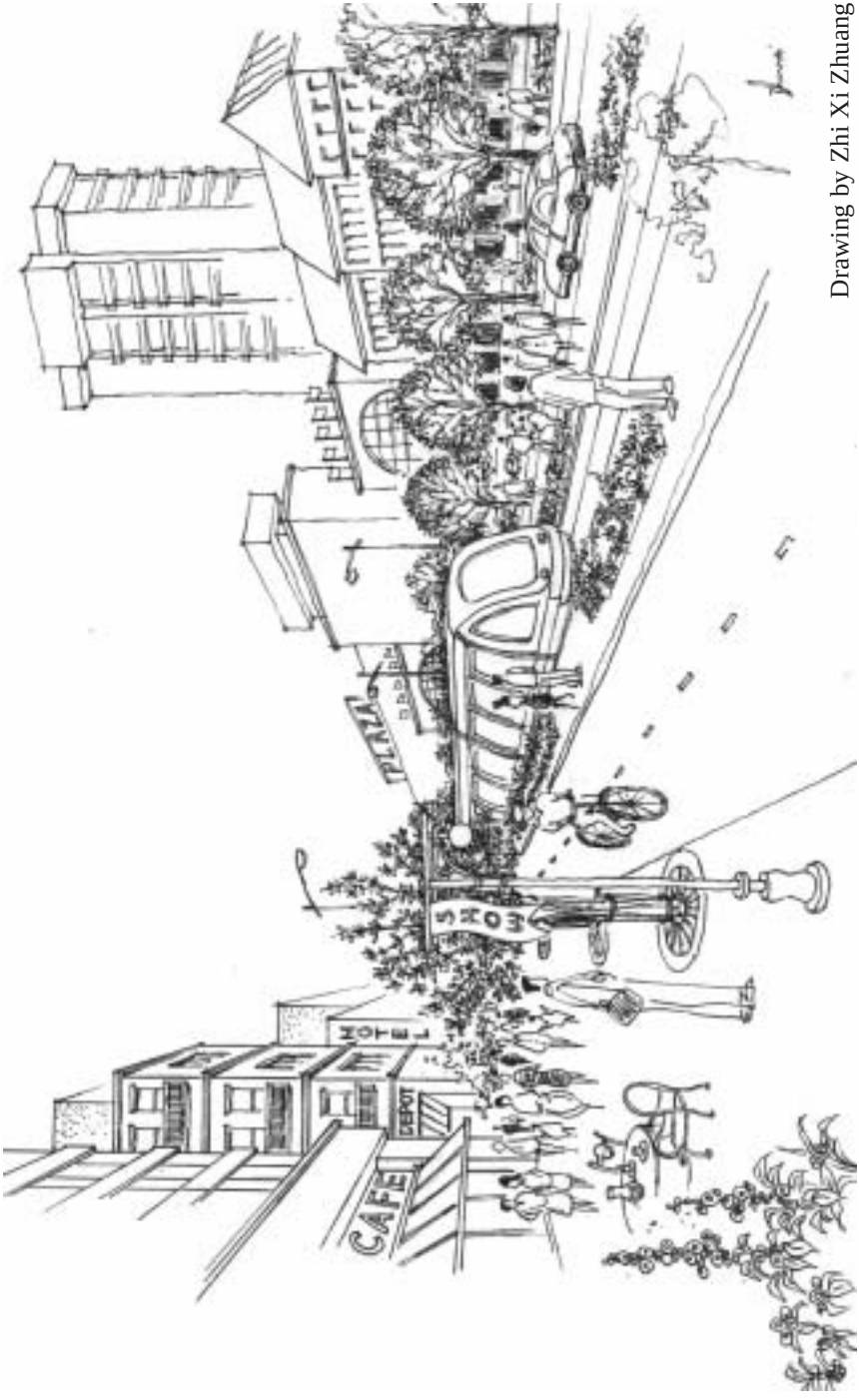
in order to preserve continuous façades and pedestrian hospitability along the boulevard. These corridors would thus offer high-level transit and automobile accessibility. After all, they would operate in suburban areas that are still predominantly car oriented.

Portions of the corridor that do not abut the boulevard would host other high-density land uses, apartment buildings and townhouses for example, which do not seek boulevard exposure, but would nonetheless benefit from proximity to retail and quality transit services. And beyond the corridor, whose width would be approximately one kilometre, one would find typical suburban subdivisions.

The intensity and nature of land uses would vary along corridors. Corridors could integrate multi-use nodes, as defined in GTA plans, with their other functions. The superiority of a corridor over a nodal strategy rests in the capacity of a corridor to provide for many individuals a transit- and walking-conducive environment at points of origin and destination. By contrast, nodes on their own can only offer such an environment at one end of a trip, hence their relatively poor transit use and walking performance.

A system of corridors could help structure suburbs in a fashion that would reduce dependence on the automobile, and thus affect suburban and metropolitan-wide modal splits. It would indeed create within suburbs an alternative to a fully car-oriented life style by providing walkable environments and high-speed and high-frequency public transit lines connecting with local transit routes serving more conventional suburban areas. The impact of these new lines would thus reverberate throughout the entire suburban realm. Such a system would provide multiple advantages to households that live at high densities by choice or necessity. In the Toronto CMA, even in the outer suburb, 32 percent of households reside in multiple-unit buildings (Statistics Canada 1999). At present, living in a suburban multiple-unit structure offers few benefits related to accessibility or the quality of the urban environment, because such developments tend to be scattered throughout the suburban landscape. Corridors would alter this situation by rewarding high-density living with an appealing walking environment, a wide range of activities that can be reached on foot and quality transit services.

The chief advantage of the corridors strategy from an implementation perspective lies in its potential provision of significant smart growth improvements without clashing too directly with powerful interest groups and ingrained preference patterns. It allows single-family housing development to proceed unhampered and does not interfere with automobile accessibility (for example, by excluding automobiles from existing lanes). Yet, for all its tolerance towards current consumer choice patterns, the strategy rests on a development



Drawing by Zhi Xi Zhuang

Figure 2: Rendition of a boulevard at the centre of a high-density corridor

coordination capacity as yet unseen in suburban environments. It also demands coercion to force a corridor presence of land uses compatible with such a location and strict design discipline to foster a pedestrian-friendly environment therein. The need to double transportation infrastructures – for cars and trucks, on the one hand, and for efficient public transit, on the other – makes for higher initial transportation investment. Still, the expense of securing transit rights of way is considerably lower when it takes place before rather than after development has taken place. And corridor land-use arrangements and transit system reorganization would secure healthy patronage levels and fare-box revenues.

Conclusion

In a sense, smart growth may be advantaged relative to prior attempts at modifying development trends, by rising concern about problems associated with present forms of urbanization. Yet, the appeal of many features of dispersion endures. To escape the fate of earlier proposals, smart growth must avoid running counter to a widely shared attachment to urban dispersion and to powerful groups with a vested economic interest in this form of development.

A dilemma facing smart growth is how much predominant land use patterns, travel behaviour and, more fundamentally, life styles can be transformed in a political environment where administrations are vulnerable to backlash against coercive policies, and a market system where mutual expectations between consumers and developers favour dispersion. A further problem confronting smart growth is limited public sector funding availability. In response to these situations, the article has explored ways of maximizing smart growth outcomes within present preferences and political and economic conditions. The objective was not to achieve a full compliance of new urban development with smart growth principles, but rather to bring metropolitan-wide density, land use arrangements and modal splits closer to smart growth objectives.

The strategies have demonstrated how smart growth can steer clear of barriers to implementation by avoiding agitating large numbers of often politically powerful opponents and making financially unrealistic demands. The purpose of the strategies was equally to make the point that effective smart growth interventions must be of a scale sufficient to have a metropolitan-wide effect. Finally, the strategies have shown that such interventions require changes in the implementation context consisting in a shift in urban infrastructure funding priorities and additional planning regulatory and coordination capacity.

Notes

[1] A case in point is Atlanta, Georgia, which has seen its quality of life ranking regress from 7th in the US in 1981 to 33rd in 1997 as traffic conditions deteriorated markedly (Jaret 2002, 167).

[2] The Durham Region official plan, while professing commitment to increased public transit patronage did not set modal share targets (Miller, Emereau and Farrow 1997, 23).

[3] This information was given by individuals associated with the development industry in Waterloo Region, who participated in focus groups investigating the potential for housing development in Kitchener's core area (see, Filion, Bunting and City of Kitchener Planning Department 1998).

[4] Density counts pertain to residential structures, attendant uses such as lots, driveways, parking spaces and local roads serving residential areas. Population data originate from the 1996 census and residential area measurements were performed on orthophotos taken that same year.

[5] These are non-rush hour figures, calculated between 10-11 am. The number of seats is 480 for a subway train, 120 for a Scarborough light rail train, 54 for a streetcar and is standardized, from the average number of seats from different models, at 36 for a bus.

[6] Another, obvious strategy is a further intensification of the concentrated realm, the chief proposal of the new City of Toronto official plan (Toronto Urban Development Services 2002). But while this intensification can slow peripheral growth, it does not as such have the capacity to alter dispersed forms of development.

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