Professional Attitudes Toward Alternative Development Standards

Steve Pomeroy

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Steve Pomeroy
Focus Consulting

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Foreword

To be completed by ICURR

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The author would like to acknowledge the assistance of a number of individuals and organizations in undertaking this research study.

In each city, I was assisted by a variety of individuals in convening the focus groups. In Vancouver, I would like thank Mark Allison at UBC for his work in making contact with participants and organizing the session. Staff at the GRVD, particularly Hugh Kellas and Ralph Perkins were most helpful in providing contact lists and generously provided meeting space. In Ottawa similar logistical assistance in convening the focus groups was provided by Michel Frojmovic while Denys Chamberland at CMHC provided meeting space. The Montreal sessions were convened by David Krawitz at the McGill School of Architecture, who also provided meeting space.

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Author's Biography

Steve Pomeroy holds both a Bachelors Degree in Urban Geography and a Master of Arts in Planning from the University of British Columbia.

Prior to joining CMHC in 1984, Steve Pomeroy worked for two years as a municipal planner and two years in the co-operative housing development sector. Between 1984-1994, he held various positions in Canada Mortgage and Housing Corporation, including a four year period as Manager of the Centre for Future Studies in Housing and Living Environments. He left this position in 1994 to established his own consulting firm, Focus Consulting, based in Ottawa.

A specialist in policy research in the areas of housing, community redevelopment and sustainable urban development, since 1994 he has completed more than 15 research studies. These have involved socio-economic and demographic analyses, housing demand, need and affordability, innovative financing mechanisms, housing policy and sustainable development.

Executive Summary

Background

The process of planning and directing the orderly growth and development of land is central to the function of local governance. Over the postwar period, the process of development has been managed largely through a set of prescriptive standards that have become increasingly numerous and complex. The pattern of urban growth that has evolved is characterized by low density sprawl. Supporting growth of this nature has imposed a considerable burden on municipal resources which can no longer be sustained. The form of development, and the current and long term implications for the municipal balance sheet, have become serious issues. Consequently, considerable attention has been directed to re-examining the array of standards that envelope the integrated process of planning, engineering and development.

In order to refocus and contain the pattern of urban growth, alternative development standards are being proposed. Proponents of these alternative standards seek to direct growth in a more sustainable way. They attempt to promote more efficient use of resources, land and capital, to lessen the environmental impact of urban development, and to achieve efficiencies in infrastructure costs.

There has been a heightened interest in this topic since the late 1980s, with much research concentrating on technical assessment of current and alternative standards. Because the existing standards have stood the test of time, there is inevitably some resistance to change and reluctance to accept new, unproved, development standards. This study was commissioned specifically to examine professional attitudes toward alternative development standards (ADS). It explores the extent to which professionals believe there is a need to do things differently and the degree of acceptance of alternatives being proposed in various forms across the country.

Research Objectives

The objective of the study was to engage selected groups of professional practitioners in focused, facilitated, discussion in order to:

1. identify the basis for, and the barriers to, change;
2. evaluate the persuasiveness of the arguments for change versus the arguments for retention of the status quo; and
3. identify practical issues that must be addressed to permit the implementation of alternative standards.

The Research Method

In order to identify and gauge the opinions and attitudes of a range of professionals involved in the development process, six focus groups were conducted in Vancouver, Ottawa and Montreal. In each city, an effort was made to obtain participation from a

range of disciplines - architecture and urban design, planning and engineering - as well as a cross section of practitioners working in local municipalities, regional government, provincial ministries of municipal affairs, utility companies and in the development industry.

The focus groups explored key issues identified from a literature analysis on ADS. These encompassed alternative standards assessed as potentially having a significant impact on both the form and cost of new or infill development, including overall density and urban structure, lot configuration, design and use of the right of way, and various regional standards relating to land dedications and institutional uses. Participant questionnaires were also employed, to collect background information on participant profiles and to generate an assessment of the views of participants on the need for ADS, relative to their specific discipline.

Principal Findings

Overall, the questionnaire uncovered a strong desire for reform in the planning and development process. Three quarters of participants strongly or mildly agreed with the statement: "We can no longer continue to approve and build the conventional subdivisions of the past." Two thirds also agreed that "significant revisions are required to a number of development standards." Some 60 per cent of participants disagreed with the statement that "alternative standards will be more costly." A core 25 per cent of healthy skeptics were more negative on the cost implications of ADS.

In the focus group discussions, support was positive where ADS were presented as opportunities - a menu from which appropriate elements can be selected based on development objectives and the specific context of a site or planning area. The principal view, however, was that ADS are simply tools. The key to better urban development is a more flexible institutional framework; one that encourages and facilitates innovation and alternative approaches.

Opposition to ADS was premised on constructive skepticism and two key related issues. Are long term cost efficiencies actually achievable? And to what extent are these efficiencies solely a function of increased densities averaging down what are in fact higher absolute costs?

Alternative standards which were seen to be promising and met with reasonable levels of support included reduced setbacks, modest reduction in pavement width, joint trenching of utilities with savings in the width of the utility corridor, optimizing street and on-site parking, and integration of institutional uses. In each case, it was stressed that any reduction in standards should be made in the context of the particular site.

For the most part, lack of support for alternative standards was not categorical, but rather was premised on a set of concerns specific to each area discussed. Addressing these concerns may open options for more extensive implementation of alternatives. In some

cases, there was fairly strong resistance, which suggests that efforts would be better spent on more promising areas.

The most notable area to be challenged was the idea of rear lanes. These were seen by most participants as having a beneficial aesthetic influence on the predominant facade of conventional suburbia. However, when analyzed, the concerns far outweighed this benefit. Rear lanes are seen as unsafe, expensive and dysfunctional. There is seldom any compensating reduction in the width of the fronting street.

The need for higher density and more compact form was generally accepted, but it was conditioned on a perceived need for much stronger urban design standards and a careful analysis of amenity and open space requirements. As increased density constrains private amenity space, a need was identified to enhance both the quality and quantity of public open space.

Balancing the goals of increased affordability and compact form was highlighted as an associated concern. It was suggested that good urban design begins to unravel when the objective is to achieve a more affordable product. There is a tendency to bundle together too many alternative standards: small lots, reduced setbacks, narrow streets, and constrained boulevard space. Participants emphasized that it was necessary to consider the right combination of ADS and their long-term implications.

A further concern is that alternative developments are being planned in the wrong places. While more compact urban villages are seen as a desirable way to contain suburban growth, the ability to achieve this type of development has been constrained by the basic economics of development. It has simply not been feasible to create an instant mixed use community providing opportunities to live and work within a five minute walk radius. It is extremely difficult to achieve a compact walking community in an isolated greenfield development. Most early efforts are still exclusive residential estates with all the shortcomings of the conventional suburb they purported to displace - they remain segregated and dependent on the private automobile. It was suggested that selective choice of appropriate infill sites in more urban locales, or in mature suburban sites, would be more sensible and feasible. The supporting commercial, retail and community infrastructure is already in place in these places.

A key outcome from the discussions was that the existing institutional framework is a more critical barrier to more efficient planning than the failure to accept ADS. In fact, difficulties in implementing ADS are, in part, a consequence of an institutional framework characterized by a highly fragmented, broad variety of professionals in different disciplines and different jurisdictions, each of whom operates relatively independently in carrying out a specific, often narrowly focused mandate (e.g. building code enforcement, fire safety, or environmental protection). Any initiative to implement ADS inevitably affects other agencies and jurisdictions. For example, narrowing the right of way for traffic calming potentially has an impact on all underground services.

Although increased cost effectiveness in infrastructure development and utilization is the driving force behind ADS, the current mechanisms for costing development and generating revenues do not lend themselves to a more efficient system. If anything, they are counterproductive. A revision in standards that generates a free school site, as shown in one example, will seldom even be identified, because each department and jurisdiction budgets and sets fees in relative isolation. Similarly, when ADS generate reduced emplacement costs the savings that result flow largely to the private developer. The municipality must wait to receive the benefit in the form of projected reductions in operating and maintenance costs. Because it is not clear that these savings will actually materialize, municipalities are reluctant to accept the associated alternative standards. Without a more holistic and comprehensive costing and benefit framework, individual isolated budget decisions will nullify the potential for collective benefit.

Future Research Requirements

This research presents findings based on a qualitative investigation. There are a number of areas where more detailed research would be useful. These include an exploration of institutional impediments to planning reform. Specifically, potential models to facilitate comprehensive costing and equitable allocation of the costs and benefits of various alternative standards should be investigated There is a need to develop mechanisms to arbitrate and allocate costs and benefits from ADS in an equitable way. Until this is done, institutional parochialism will continue to thwart efforts in this area.

The related issue of costing also requires a broader empirical base, building on recent preliminary research. It is necessary to undertake a full analysis of the infrastructure costs and the revenue impacts of ADS developments as they affect all the parties: the developers, the utilities and the municipalities.

Some review of practices relating to access and excavation of underground services would assist in the development of alternative and more optimal design of utility corridors. In particular, the option of placing services under pavements to optimizes the use of street parking lanes is desirable. This should be examined in the context of optimizing space requirements for on-street and on-site parking. There is a consensus that these spaces are not currently being optimized, leading to inefficient land use.

A recommendation that came directly from participants was that opportunities to interface with professionals in disciplines outside of their own should be sought out on a more regular basis. This would increase mutual understanding and help to identify areas where reform initiatives might be pursued collectively.

Chapter 1 Introduction and Objectives

Introduction

During the past decade there has been growing interest in alternative patterns of urban and community planning. This interest, which has manifested itself both in the literature and in practice, has been fueled by a realization that the predominant form of development is not sustainable either in fiscal, environmental or social terms (D'Amour 1991; Rossland 1992; NRTEE 1994; McBurnie 1992; IBI 1993; Berridge et al. 1995; Plan Canada 1996). It is now generally recognized that alternative ways must be found to increase the efficiency of land use; reduce infrastructure costs, provide improved resident satisfaction and a stronger sense of community in more aesthetically pleasing environments, and reduce the environmental impact of urban development.

Moreover, the cost of servicing new development is being increasingly challenged by fiscal restraint at all levels of government. Constrained government revenues reflect stagnant real incomes and already high levels of taxation, leading to limits on taxation capacity.

Against this backdrop, alternative development standards are being proposed both as a way to achieve efficiencies in the cost of delivering a variety of public services, and as a means to implement alternative planning and development models.

Professional practitioners in the development and planning process are key actors in the efforts to develop and implement new or alternative approaches to development. While there is a considerable literature on alternative forms of development and the associated development standards that might be entertained, there is little knowledge about the attitudes of professionals toward such revisions. Indeed, there is some indication from lively debates at professional conferences and in ongoing regional planning processes, that not all participants in the planning and development process are on side with the idea of adopting alternative standards (Plan Canada 1995, 35:5).

Acceptance of new approaches or new standards would therefore appear to be far from unanimous. Various initiatives to pursue regulatory reform and to revise standards have encountered varying levels of resistance. In some respects, the resistance to change in development standards is well founded. Existing standards have been tried and tested over time and, for the most part, they have functioned very well. There is a healthy skepticism about the worthiness of the alternatives that are being proposed to displace, or replace, these existing standards.

Development professionals are the key to change. Whether they propose and approve or reject alternative forms of development, these professionals are critical gate keepers in the process of change. It is they who will determine the pace of change in the planning and development process. If changes are to come about, it will be because individuals in this complex development process both drive and accept change.

The purpose of this study is to explore the attitudes of professionals toward the variety of emerging alternative development standards (ADS). This study investigates the extent to which professionals believe there is a need to do things differently; and the degree of acceptance of the alternative standards and approaches being proposed in various forms across the country. The study was not intended to evaluate the alternative standards in and of themselves, but to determine how professionals are reacting to these standards.

The objective was to engage selected groups of professional practitioners in focused facilitated discussion in order to:

1. identify the basis for and the barriers to change;
2. evaluate the persuasiveness of the arguments for change versus the arguments for retention of the status quo; and
3. identify practical issues that must be addressed to permit the implementation of alternative standards.

Structure of the report

In order to establish context, a brief overview of the economic, social and environmental issues raised by current development standards and the rationale for alternative standards are provided in Chapter 2. Following this literature review, Chapter 3 describes the research methodology used – a series of focus groups conducted in Vancouver, Ottawa and Montreal. The report explains the research approach adopted for this study and how the primary research was completed. The results of the focus group discussions are reported and synthesized in Chapter 4. The final chapter of the report concludes with some observations on the efficacy of certain approaches and standards, and outlines areas for further analysis.

Chapter 2 Overview of Development Standards

Development Standards cover a wide variety of specifications relating to neighbourhood and site planning, engineering and the infrastructure that supports community services. These can be grouped in functional categories as:

A. Planning Standards
    Neighbourhood layout
    Lot and dwelling
B. Engineering Standards
    Roads
    Storm Drainage
    Water Distribution
    Sanitary Sewer
    Utilities (Telephone, Cable TV. Electrical Power and Gas)
C. Community Services
    Policing
    Fire Protection
    Schools (land dedication)
    Transit
    Recreation Facilities and Libraries
    Open Space (dedication)

Clearly, these functional groups are interdependent: neighbourhood planning densities and road design directly impact on all of the community services, and vice versa.

Why Alternatives: What's wrong with Traditional Standards?

The proliferation of publications and conference debates on the issue of alternatives is a testament to the widely held belief that something is wrong with the status quo (Plan Canada 1995). The principal reason for these concerns is that the predominant pattern of urban development that has prevailed since the Second World War no longer seems to work well. The continual accumulation of standards and a gradually changing context dictate that the plethora of regulations and standards be both simplified and re-evaluated. Arguments in favour of a re-evaluation of the existing tome of standards are prevalent in the literature. Most frequently the arguments are based on considerations of demographic and social change, cost and affordability, livability, environmental impacts and institutional paralysis. To briefly highlight some of the key considerations that have created a new context for the establishment of alternative development standards:

- Demographic and social changes have significantly altered the nature of consumer demand. The nuclear family with a single income and three or four children, predominant in the early postwar period, is now a minority. The fastest growing new form of household is a non-family, typically single-person household implying a

different set of housing and community requirements (CMHC Lewis 1991; Johnson 1993; Ontario Ministry of Housing 1995).

- The current view is that the principle of user pay should be applied so that growth will pay for itself. The high costs of servicing new development, and of updating deteriorating infrastructure in developed areas are being shifted to the consumer in the form of development cost charges, directly impacting affordability (Marshall Macklin Monaghan 1992; Lampert and Denhez 1997).

- The pattern of urban sprawl that prevailed from the late 1950's through to the present is not sustainable. This pattern involves low density and excessive land consumption. It is driven by, and engenders, a lifestyle that is auto dependent. There is now a heightened awareness and concern about the environment and the direct link between urban form, density and auto use. Moreover, the prevailing low density pattern is expensive to service with infrastructure, especially in times of fiscal restraint. (WCED 1987; Newman and Kenworthy 1989; D'Amour 1991; Rossland 1992; IBI 1993; Pomeroy 1993).

- Conventional standards are typically prescriptive, and in some cases, outdated. Because they are cast as regulations, there is little flexibility in their implementation, even when a particular context suggests that a different design would be more effective. This hampers desirable innovation. Prescriptive and outdated standards can directly produce, or inadvertently encourage, inherently restrictive and expensive forms of development (McBurnie 1993; Sewell 1994; OMH 1995; Berridge 1996).

Critics of conventional standards often suggest that the prevailing pattern of development has resulted from the interaction of the complexity and lack of coordination in existing planning and development standards. The three functional categories noted above - planning, engineering and community services - involve a multitude of agencies and levels of approval. Although there may be some coordination on specific applications, more often than not each discipline or level operates independently and in isolation: "Specialists applying their own narrow range of criteria are unwilling, then often finally unable, to balance criteria for the sake of attaining a superior design that optimizes qualities from not only their own specialty but other relevant viewpoints" (Berridge el al 1996, 4). This raises a critical concern beyond the issue of standards themselves. The institutional framework within which standards are developed and implemented is just as important to the end result as the standards themselves - or, perhaps, even more so. .

In their responses to concerns about conventional patterns of development, proponents of alternatives argue that ADS encourage development patterns that:

- are more affordable to consumers and to government;
- are more flexible and adaptable to changing needs over time;
- discourage sprawl;
- are environmentally responsive;
- support transit and reduce auto dependency; and

- create more liveable communities.

Alternative standards do not necessarily mean lower standards or levels of service. Indeed, they seek to enhance the ultimate product of the development process. This can involve a more efficient way of producing a similar level of service. It can also mean a slightly reduced level of service in one particular area, in exchange for significant enhancement in other areas of greater priority such as housing affordability or protection of a natural amenity (Ontario Ministry of Housing 1995). A 1991 study on consumer housing choice and the environment found a high propensity among home buyers to trade off space and lot standards for improved environmental protection through technologies generating reduced energy and water consumption (Energy Pathways 1991). Ultimately, such improvements at the scale of the house can be used to reduce infrastructure standards at the subdivision level. However, prescriptive building standards constrain consumer's ability to trade off levels of service.

A number of recently developed communities have used a range of alternative standards: Seaside Florida, Kentlands, (Maryland), Montgomery Village in Orangeville, the Village of Morrison in Oakville, MacKenzie Town in Calgary, CloverValley Station in Surrey B.C.; and the proposed Cornell Development in Markham, Ontario. In each of these examples, a macro level, comprehensive planning approach underpinned the development. Such an approach necessarily requires close collaboration and interdisciplinary co-operation. In these examples alternative development standards are not ends in themselves; they are simply the means to facilitate a new vision of the urban community. However, these are isolated policy exceptions. Best regarded as prototypes, they are each the result of an extensive planning exercise that carefully considered how alternative standards might be employed to implement to create move liveable and sustainable communities.

Because these were such innovative developments, they typically required considerably more time and expense to gain planning approval. It is unlikely that developers of other communities will subject themselves to such an arduous process when they can simply replicate the conventional pattern, flaws and all, with less difficulty and cost. To reach the goal of more liveable and sustainable communities, the development approval process must be revised so that it does not systemically dissuade this type of development.

A second characteristic of these new approaches is that they represent a conceptual counterpoint to conventional development. The conventional form is a consequence of the aggregate interaction of existing prescriptive standards; the alternate "new urbanism" begins from the endpoint. It defines a desired output (e.g. a more compact form which reduces auto dependency and enhances the natural environment). There is a strong consensus that such performance based output indicators can be more valid and effective (Berridge et al. 1996). Moreover, they offer the potential for flexibility while still maintaining control over the ultimate output.

In their recent study, *The Integrated Community*, Berridge et al. (1996) make an important distinction between local or neighbourhood standards and regional/community standards. The former include local road design and lot regulation. "Community" or "regional" standards refer to the larger scale, encompassing a cluster of neighbourhoods and the road network that connects them: in short, the urban structure including integration of land use and natural systems. Berridge et al. (1996) further observe that there is much discussion in the literature on the topic of local standards but that very limited attention has been paid to alternative regional standards. Just as the inadvertent (and often undesirable) impact of conventional local-level standards in the form of urban sprawl and congestion, is seen most profoundly at the larger regional scale, the real benefits of alternative standards can also be best assessed at this scale. However, the changes necessary to facilitate this macro scale outcome must be implemented at the micro scale (e.g. the level of the lot and street).

Recent Examples of Alternative Development Standards

Increasing interest in alternative development standards is, in part, a response to the impetus provided by senior government. At the Federal level, in 1990, CMHC initiated the ACT program (Affordability and Choice Today) specifically to promote investigations and demonstrations in regulatory reform and streamlining. Stimulated by the ACT program, a number of jurisdictions have embarked on ADS demonstrations.

Among these, the City of Guelph has initiated a comprehensive review of engineering and planning standards (ACT 1996). In 1994, the Regional Municipality of Hamilton Wentworth, citing poor coordination between departments as well as excessive engineering standards for roads and services, initiated a streamlining review of the development approval process. The Ottawa-Carleton Regional Municipality (RMOC) used an ACT grant to fund a design charette for ADS. The result has been implemented as a demonstration and is currently being monitored by the regional municipality. In this case, the plan of subdivision required a number of revisions to planning and engineering standards: the front setback was dropped from 6m to 3m; the right of way was reduced from 20m to 16m; the road pavement was reduced from 8.5m to 8.0m; and lot sizes for the townhomes were diminished by almost 50 per cent.[1] Common service trenches were used to connect services to the units, and front driveways were twinned. It is estimated that these revisions saved the consumer $4,000 (3 per cent) on the price of the townhomes.

In 1989, the Ontario Government adopted the Policy Statement on Land Use Planning for Affordable Housing. The primary purpose of the policy statement was to promote planning practices that generate a more affordable and diverse mix of housing. The policy statement was complemented by a number of research studies as part of the reform of the Planning Act. In 1995, the Ministry of Municipal Affairs published a useful guidebook entitled, *Alternative Standards: Making Choices.* This outlined both the current and

1. Reduction in the right of way was achieved primarily by eliminating the allowance for future installation of sidewalks. Although sidewalks are generally not installed in suburban developments, the city currently retains the allowance in the right of way in the event that a neighbourhood subsequently petitions for sidewalks.

possible alternative standards to achieve specific performance outputs in the full range of planning and site servicing .

Adjusting lot and road standards has been found to have a profound impact on overall development form and costs. A 1990 study by the Ontario Ministry of Housing reported that reduced lot size can translate into a 9 to 12 per cent reduction in the per metre linear servicing costs (Berridge et al. 1995).

The Region of Peel recently established a task force to study various efficiencies in the public land dedication process, with a particular focus on reducing the cost of school site acquisition. They found that combining reduced road right of way on the residential streets in the 187- acre subdivision, and reducing school site size by one-third, achieved the land dedication required to provide a school site (effectively a "free dedication") (Peel Region, 1995).

Moreover, combining community facilities such as schools and parks can provide up to a 15 per cent reduction over the cost of segregated facilities (Peel Region 1995; Berridge et al. 1996). Similarly, utilizing park and open space dedications as part of a storm water management system can combine dedications and increase efficiency of land use. This has been achieved in a number of examples, including Markham and Ajax, Ontario (Berridge et al. 1996). More compact form, which concentrates the same number of units on a smaller area, can leave a greater proportion of open space and create an asset that both improves storm water management and enhances the natural environment (e.g. by permitting surface runoff to infiltrate back into the water table rather than being collected and diverted into a storm sewer system).

In 1994, CMHC and the Regional Municipality of Ottawa-Carleton jointly commissioned a research study to evaluate the infrastructure costs associated with conventional and alternative development patterns (Essiambre, Phillips Desjardins et al. 1995). Using an existing suburban area of some 340 hectares, the study compared the relative infrastructure costs of the conventional suburban plan that actually exists (assuming it was built at 1996 costs) with the costs if the suburban area had been designed and built in 1996 under alternative standards that embrace a more compact form.

Both public and private costs were considered and estimated over a 75-year life cycle. The alternative plan proposed an urban structure with seven individual identifiable neighbourhoods each adhering to the five minute walk principle (400m radius). Each neighbourhood revolves around a central green surrounded by a mix of uses that include office, commercial and retail, and higher density residential uses.

The cost comparison found that the total infrastructure costs were considerably (50 per cent) higher in the alternative plan. However, the more compact form and higher gross density results in lower per unit infrastructure costs under the alternative plan (almost 7,000 dwellings versus 4,000 in the conventional plan). The largest "saving" in the life cycle costs was in initial emplacement costs which were reduced by $5,300 per unit.

Some 60 per cent of this saving relates to emplacement costs normally incurred by the developer. In addition to the remaining 40 per cent of capital savings, the municipality would generate savings in operations and maintenance totalling $3,700 per unit in 1994 dollars. Adding replacement costs, the total life cycle savings amount to some $11,000 per unit When this per unit saving is spread over a community of 7,000 dwellings this totals a saving of $77 million, (on a $783 million development).[1]

This infrastructure cost impact study highlights the relative importance of certain standards on the overall cost of a development. Standards specifically or indirectly having substantial cost impacts include lot sizing and building placement, road layout, and right of way dimensions. The overall density of development is perhaps the most important determinant: the number of units acts as a denominator in the per unit costs of service infrastructure. Compactness and density also have a direct influence on efficiency of transportation, including the expensive matter of school busing. Standards relating to land dedications also have a significant impact and therefore merit close scrutiny.

Scoping the Study: Particular Standards to be Examined

Within the three functional categories of standards – planning, engineering and community services - there is an extensive listing of very specific standards. It is not practical to explore all or each of these due to the large number and variety of specifications between municipalities. However, a discussion, to be meaningful, should ideally be based on specific examples rather than on generalities or abstract principles. It therefore seemed advisable to limit the number of standards under consideration.

The principal objectives of ADS are cost efficiency and the creation of more socially and environmentally sustainable, and liveable, communities. The most frequently proposed approaches therefore involve some form of intensification or more compact community form. Although its gross density may not necessarily change, the more compact site concentrates development in more finely grained clusters, each of which has a higher net density than subdivisions based on conventional standards.

The more compact community also incorporates a mix of uses rather than segregating residential, commercial and institutional uses. Although industrial use remains segregated, the soft nature of many of them, now often hard to distinguish office/retail, means that the case for their segregation is greatly diminished.

Given this context, a research decision was made to concentrate the focus group discussion on design and engineering standards that most significantly impact the achievement of more compact, more sustainable communities. Inevitably, this led to a consideration of the overall urban structure and, directly related to this, of the dimensions and specifications of individual lots and the system of roads. In combination, urban form

1 This is in comparison with an equivalent 7,000 dwellings built under conventional standards which is a significant increase in density over the existing area which under conventional standards now permits just over 4000 dwellings.

and the road networks impinge upon many other aspects of infrastructure servicing, most particularly placement and sizing of utility trenches, gas lines, storm and sanitary sewers and water supply.

While many arguments in favour of more compact communities encompass social and environmental benefits, costs are often the strongest lever to inspire a change in standards and practice. It was desirable to explore those areas where revised standards might have a significant impact on costs. The recent case study in the Regional Municipality of Ottawa-Carleton (cited above) was used to scope the relative costs of different infrastructure components (Essiambre, Phillips Desjardins et al. 1995). Figure 2.1 illustrates the relative importance of a range of service components on the basis of their share of total subdivision costs, using conventional development standards. This shows both the initial capital emplacement costs and the present value of life-cycle costs (including replacement, operating and maintenance costs) over a 75-year period. School facilities and transportation (busing) are by far the single most significant cost, accounting for 29 per cent of capital emplacement costs and 45 per cent of the life cycle costs (in present value terms)[1]. Excluding school costs, the major servicing costs are for roads, accounting for 15 per cent of total servicing capital cost. Notably, recreation facilities, park land, and storm water each account for one tenth (a total of 30 per cent) of life-cycle costs. Given the high share of costs attributable to school facilities and transportation this suggests that combining land use, for example by sharing school and recreation facilities and locating storm water retention ponds within open space dedications, could have an important impact on overall cost efficiency. In addition, a more compact community, especially one planned on the basis of a five minute walk radius as proposed by Duany and Plater Zyberk might enhance this efficiency by, for example, reducing the level of school busing.

1 This level of school-related servicing costs may not be representative of all municipalities as the site is served by four school boards. This is a suburban site and Ottawa-Carleton has a relatively high level of busing. A large part of the costs are related to maintaining a fleet of school buses.

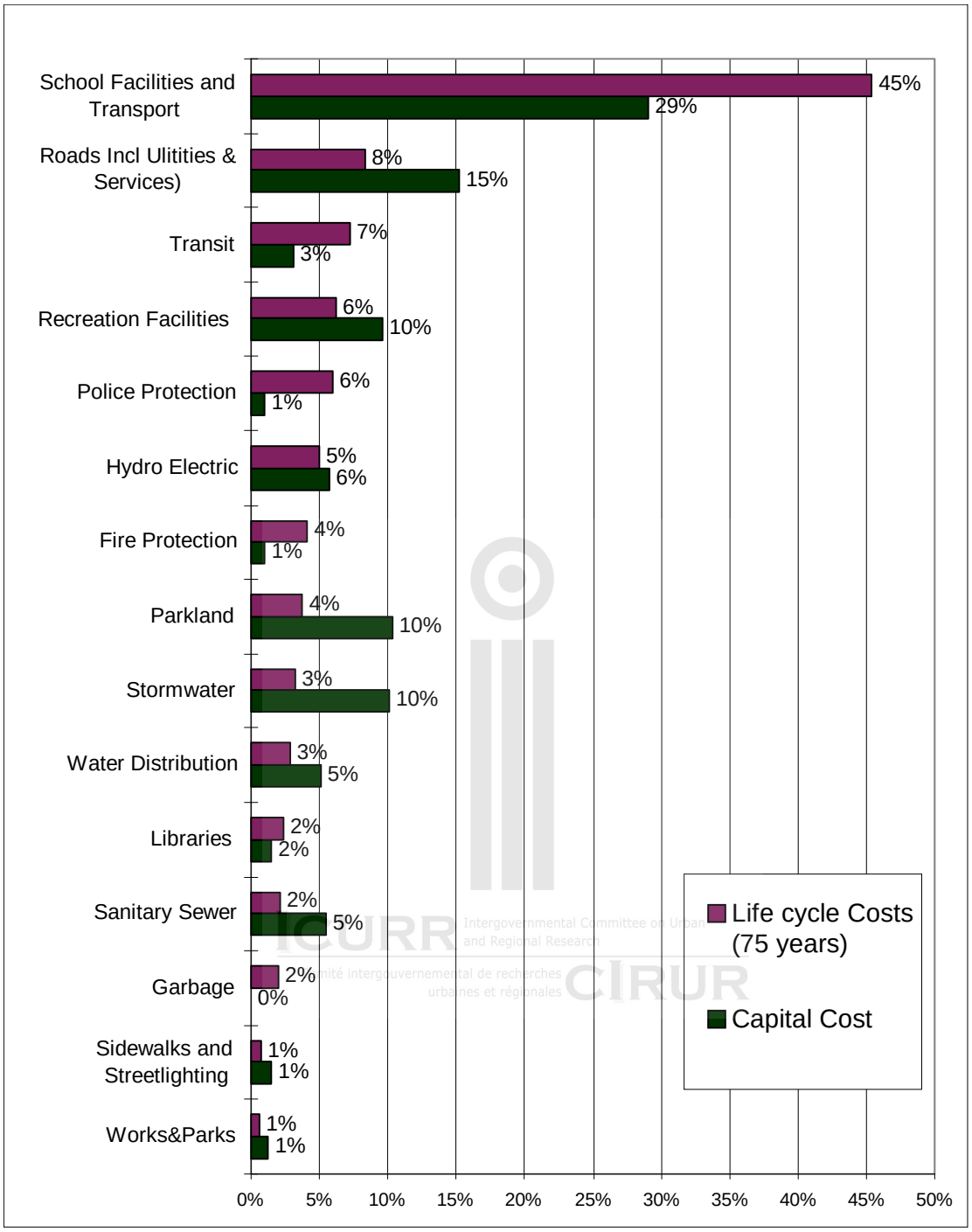


Figure 2.1 Capital And 75-Year Life Cycle Costs: Conventional Development Standards

(source: Essiambre, Phillips, Desjardins, 1995)

Chapter 3 The Research Method

A focus group approach was selected as the most appropriate way to pursue the objectives of this research.. The level of detail and the specific context of urban development did not appear to lend itself readily to more quantitative forms of survey research.

Focus groups are useful in probing opinions and attitudes and in exploring the motivations and underlying behavior that support these opinions. A focus group is also a useful forum when the concept being explored is new or not fully understood.

Moreover, focus groups can be a creative exercise, especially when conducted with knowledgeable participants differing in their perspectives and expertise. By introducing the perspectives of different disciplines, as in this study, the focus group technique can stimulate new ideas or new ways of thinking about certain issues. Here, the objective was both to examine the impact of certain standards on other aspects of the development process and also to explore combinations of different changes.

The interplay of various disciplines and standards was identified from the literature review as a key element to explore further. This was reinforced during the recruiting for the focus groups. Many people expressed strong interest in participating in a forum that would give professionals from different disciplines an opportunity to challenge and question one another.

Structure and Conduct of the Focus Groups

Focus groups were conducted in three cities: Vancouver, Ottawa and Montreal. Two sessions were conducted in each city with a target group size of ten to twelve participants for each. This size group provides a diversity of perspectives but is small enough to remain informal and encourage active participation.

In each region, coordinating bodies, usually technical planning and engineering .committees that serve as information exchanges, were contacted for lists of potential participants. Where necessary, these lists were supplemented with names from the local chapters of the Public Works Association of Canada, from the provincial and local chapters of the Canadian Institute of Planners and from individuals contacted in each city.

To identify issues and concerns as well as barriers to the adoption of alternative standards, and to stimulate more discussion and dialogue, we deemed it essential to include in the study individuals who had some objection to ADS. The recruiting process found a strong level of interest among proponents of ADS and considerable effort had to be made to ensure that each group contained opponents as well. This was achieved, in part, by describing the focus group in the invitation notice as an opportunity for those with concerns about trends towards alternative development standards to voice their reservations.

Focus groups were used as a qualitative, exploratory, research tool so it was not essential to select participants to be statistically representative. In fact, we made no attempt to select on a random basis. The main objective was to achieve representation from a full range of professions and disciples. In addition, because as participation required giving up three or more hours of the day (all groups met during business hours except for one session in Montreal) there was inevitably some self-selection bias.

Profile of Participants

In order to gauge the initial attitudes of participants, each group was asked to complete a short questionnaire at the commencement of the focus group. This information about their particular professional discipline and the geographic focus of their jurisdiction is summarized in Table 3.1.

Table 3.1 Focus Group Participant Profile

Participant Totals		Geographic Focus	
Vancouver:	33	Inner city	7
Ottawa:	23	Old suburbs	8
Montreal:	22	New Suburbs	19
Total	78 *	Combination	18
Professional Discipline		Type of Employer	
Urban Design	6	Municipal	26
Architect	2	Regional	2
Planner	23	Provincial	4
Transportation Engineer	2	Consultant	6
Civil Engineer	9	Utility	10
Developer	3	Private Developer	3
Fire Dept.	2	Fire Dept.	2
Economist	1	Other	3
Landscape Architect	1		
Development Control	1		
Other	6		

* (Questionnaires returned = 56)

Although the majority of participants were municipal planners, each session included professionals from engineering or utility companies - over the six focus groups all utilities including hydro, gas, cable TV and telephone - were represented. Developers participated in three of the sessions (one in each city). As well, some consultants who frequently represent the development industry were further able to add this perspective to the discussions.

The questionnaire also included four value statements about alternative development standards. These were intended to provide some context to assist in the analysis of the discussion, both in each individual group and overall. For each of the four statements participants were asked to indicate whether they strongly agreed, mildly agreed, mildly disagreed, strongly disagreed or had no opinion on the specific statement. The responses to these questions are presented in the next chapter, together with a synopsis of the group discussions**.** Finally, the questionnaire asked participants to list the aspects of ADS that they believe are most promising, as well as those that cause them the greatest concerns. The most frequently cited issues are summarized in Table 3.2 below. This list of issues reflects the actual deliberations of each group, as presented in Chapter 4. The lack of consensus is apparent from the appearance of certain elements in both the promising and concern lists and from the relatively low frequency with which specific aspects are cited.

Table 3.2 Most Frequently Cited Aspects of Alternative Development Standards

Most Promising	Number of times identified *
Reduced setbacks	7
Reduced right of way	17
Smaller Lots	11
Compact form/ more efficient land use	17
efficiencies in servicing /utilities	7
Greatest Concerns	
Poor urban design/ Poor or reduced urban amenity/quality	9
Operating and maintenance costs	8
Reduced right of way	7
Rear lanes	5
High density	5

* from participant questionnaires; n=56

Setting the Context for each Discussion

Each focus group commenced with an introduction to explain the purpose and topic of the session (a one page overview had been faxed to participants as part of the invitation, so there was already a general understanding of the intent. Then a brief presentation covered the factors underlying the promotion of alternative standards. Examples were provided, using slides of actual built developments in Ontario, B.C. and Maryland. These included both plan and section views of alternative siting, boulevard and pavement width. Slides of a number of built examples were used to show the results from cases where developments have applied alternative standards. These included plans, street and lanescapes. The focus group was then invited to comment and discuss the images or

diagrams shown. Where the group became animated, the facilitator permitted a relatively free flow of the discussion. Prompts were used to redirect or move the discussion along, so that it covered the range of predetermined discussion issues.

Generally, the for format began with siting, lot size, setbacks, right of way width and rear lanes and was limited initially to above ground or surface issues. Subsequently each group examined the implications for underground services and utilities and alternative standards for boulevard and pavement width.

The third set of discussion issues related to alternative methods of storm water management - including treatment of storm water at the scale of the lot, and community-level management alternatives. Again, slides of diagrams and actual examples were used to stimulate discussion.

The discussion of integrated storm water management with other community-level facilities such as recreational ponds and passive recreation areas stimulated debate about regional standards and opportunities to integrate across jurisdictions.

Inevitably, discussion strayed from this framework, often pursuing interesting dialogue as different views were expressed and either reinforced or contested. Among topics debated were the fundamental need for alternative standards, the role of the planning and approval authorities in interpreting what the market will, or should, accept, and the nature of the institutional and legislative framework in which standards are implemented.

Regional Context

With focus groups conducted in three metropolitan areas and three provinces, the level of concerns and the topics discussed inevitably reflected particular regional differences. There were significant differences in development costs (these also vary widely within each region) as well as the in the way in which services are installed. Selected development and servicing costs are presented in Table 3.3.

In Quebec, it is typical for the public works departments of the municipality to install services, with the developer paying a standard fee that varies by municipality. In B.C. and Ontario it is more usual for the developer to install all public services to the municipality's specifications. The developer's infrastructure contractor also provides and covers the cost of preparing trenches into which utilities lay their cables. The exception is gas. As gas services are normally installed following construction, unlike all other services, it is customary for gas utility company both to do the installation and to cover their own costs.

Table 3.3 Selected Statistics for Focus Group Metropolitan Area [(a)] (all prices in 1996 dollars)			
	Vancouver	Ottawa	Montreal
Average starter home price	$194,200	$134,500	$100,000
Typical suburban land cost ($/sq. ft)	$50	$14	$6
Property taxes	$1,560	$2,968	$1,951
Development charges or servicing costs /unit [(b)]	$17,000	$15,300	$11-12,000
Population growth			
1981-1986	11.6%	14.0%	7.5%
1986-1991	14.5%	14.2%	10.8%
Average 1996 income of renter households	$43,200	$39,900	$33,625
Per cent of renters who can buy starter home	26%	34%	40%
New homes sold below affordable price 1996	45%	76%	78%

Notes:

a) All data except servicing costs from a forthcoming report on long term affordability trends in Canada's urban centres produced for CMHC's Market Analysis Centre. Data are averages for January to June 1996, unless otherwise specified.

b) Servicing and Development Charge data from Lampert and Denhez (1997) based on Surrey, Kanata and Laval. Charges in Montreal include both on-site and off-site. Municipality installs services and charges fee to developer. In Vancouver and Ottawa, development charges are for off-site services only – the developer is responsible for all internal subdivision service costs.

Development charges in the Montreal region relate primarily to the actual cost of servicing *within* the subdivision. Off-site infrastructure is less dependent on growth related cost charge bylaws which are the norm in the other jurisdictions. A development cost charge comparison is therefore akin to a comparison of apples and oranges. Nonetheless, given that for Laval, the costs shown in Table 3.3 are all inclusive, but for Surrey and Kanata they reflect only off-site growth related development cost charges, it is clear that the cost to the developer and, ultimately to the consumer, are much higher in Greater Vancouver and Ottawa-Carleton than in Montreal .

The other aspects of the development cost equation - ongoing operating and maintenance costs - are borne by the municipalities and by the utility companies. Municipalities finances these expenses largely through property tax revenues. Here again there are very significant variations. Benefiting in part from a provincial home-owners tax grant (approximately $400), Vancouver has by far the lowest property tax level of the three centres. Quebec tends to have relatively high taxes, in part offsetting the lower development cost revenues. In Ontario, municipalities directly fund part of the income assistance portion of the welfare system through property taxes. As a result only 80 per cent of property tax revenues are available for comparable municipal services and school taxes. Ottawa has the highest property taxes in the country (based on metropolitan area average starter home prices).

Similarly, serviced land costs are far lower in suburban Montreal, with the result that the housing is considerably more affordable. In the first half of 1996, the cost of a starter home in Montreal was almost half that in Vancouver and 25 per cent lower than in Ottawa-Carleton. With relatively slower household growth rates there has been much less demand pressure in the Montreal region, a primary factor underlying the lower land and housing costs.

Given the differing degrees to which municipal charges generate revenues sufficient to cover the cost of growth, as well as the very large difference in servicing, land and house prices, the impetus to examine and revise development standards varies greatly between regions. This variation was reflected in the focus group discussions. Indeed, as Montreal's housing and development costs are relatively low, the Montreal group did not identify capital costs as a pressing issue. All groups were concerned, however, about the impact of new development on ongoing operating costs and maintenance budgets.

Cultural, topographic and climatic influences and differences also permeated the discussions. Some municipalities in the Lower Mainland of British Columbia are faced with unique servicing and development challenges as growth is being pushed up the mountain sides by restrictions on development due to the extensive Agricultural Land Reserve in the Fraser River valley and flood plain. A constraint exists in Ottawa in the form of the greenbelt in which development is precluded. Originally planned to contain growth, this has proven ineffective as many new developments have leapfrogged over this reserve. Although Montreal has a limited land base on the Island, this has not yet posed a constraint on development. However, most development is occurring off the Island where growth is relatively unconstrained and sprawl predominates. The most serious problem facing Montreal is not the cost of development on the Island, but the lack of it. Officials are concerned that the phenomenon of inner city decline, more often associated with the US, may be a problem in Montreal. High immigration rates and race issues appear to be factors.

In both Ottawa and Montreal, the relatively severe winters and high snow volumes result in a high level of concern about the feasibility and costs of snow storage and removal under various alternative standards. This was not an issue in Vancouver.

This brief overview indicates that although the three metropolitan regions differ from one another in the relative importance of certain factors and issues, there is some commonality in design standards and the issues that the existing standards generate. On this basis, the professional attitudes expressed in the context of these metropolitan areas most probably reflect those held in other jurisdictions, including smaller centres.

Chapter 4: Attitudes Toward Alternative Development Standards

Individual Attitudes

The focus group method is an effective way to generate group discussion and determine whether or not there is a consensus on certain issues. However, the technique does not readily provide a clear assessment of individual attitudes, which are typically masked or influenced by the discussion itself and the group dynamics. In order to gauge the initial opinions of participants, four value statements were posed as part of a participant questionnaire completed prior to the discussion.[1] Participants were asked to respond to four statements:

a) We can no longer continue to approve and build the conventional subdivisions of the past

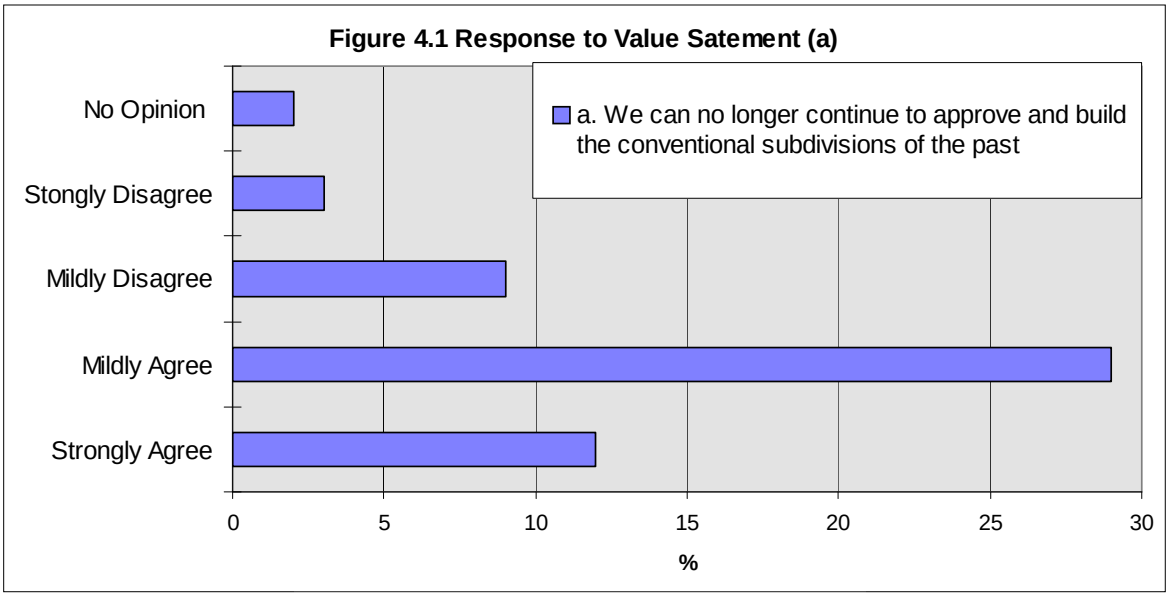
b) Most existing standards are appropriate; only minor revisions are required

c) Significant revisions are required to a number of development standards

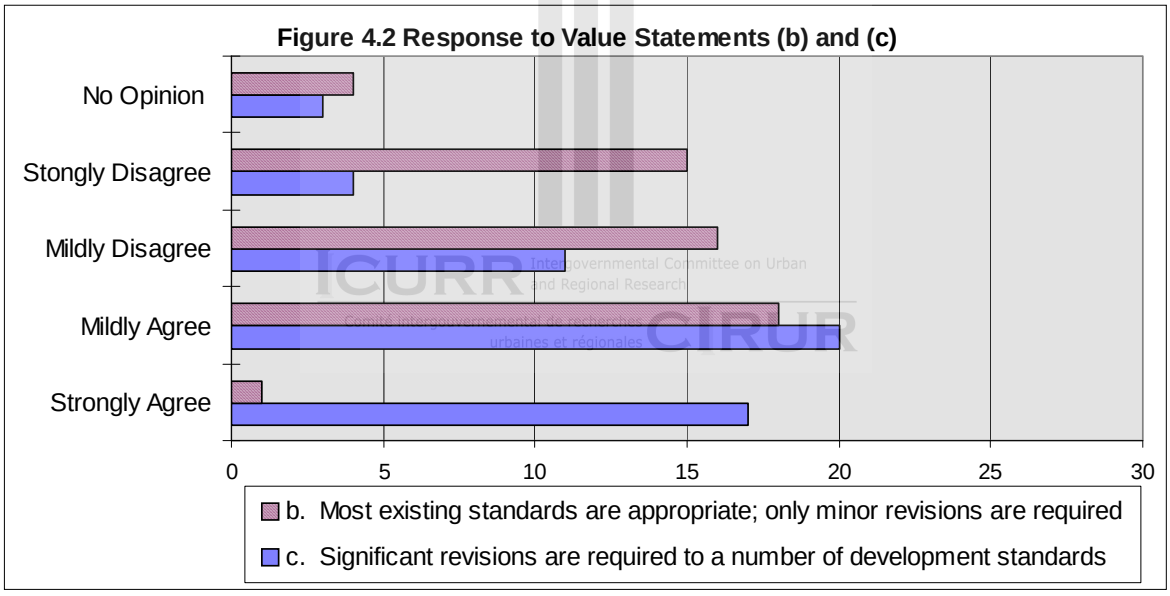
d) Developments based on alternative standards will be more expensive than conventional development

As Figure 4.1 shows, a significant 75 per cent of the participants agree that the conventional pattern of development is flawed and unsustainable. Another 20 per cent disagreed. This disagreement was reflected in the focus group discussion where several participants maintained that conventional subdivisions should continue to be built. The general view was that ADS are not a universal panacea but should be implemented selectively and strategically.

[1] These results reflect only the views of the participants. As the sample was not drawn randomly or systematically it is not a statistically reliable representation of the larger universe of development professionals.

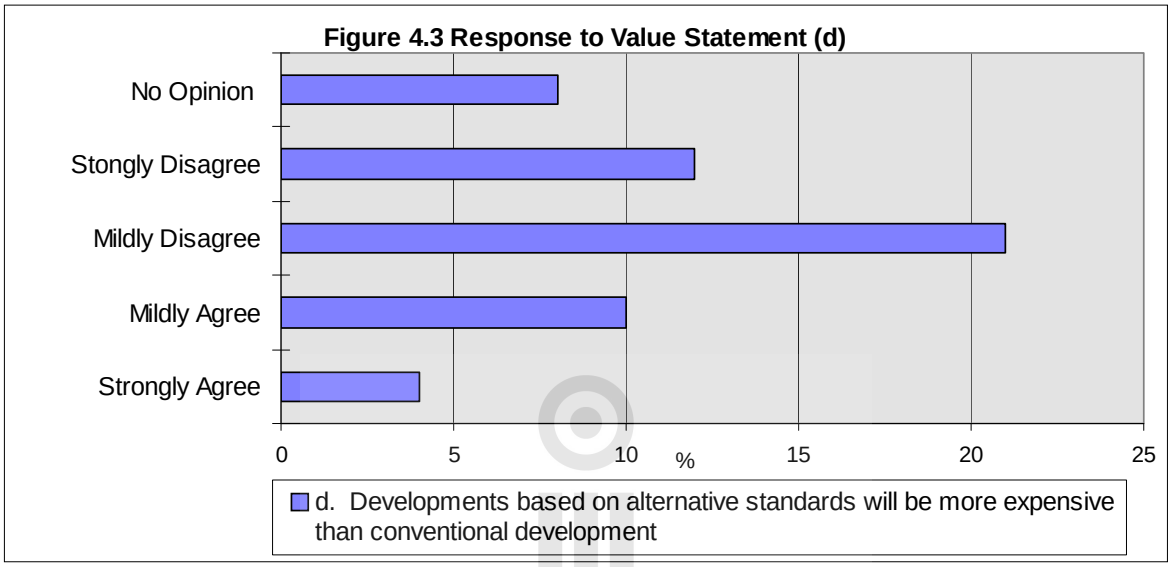


Indeed, there were mixed feelings about the necessity for alternative development standards and approaches. The responses shown in Figure 4.2 clearly reveal that a large majority of professionals believes that significant revisions are needed.



More than half the respondents disagreed with the statement that "most existing standards are appropriate"; a little more than one third are more comfortable with the existing standards and only see a need for minor revisions. Conversely, over two thirds of the participants agreed that "significant revisions are required" (these two statements were deliberately inverted to verify the strength of opinion on the need for revisions). Again, approximately one quarter of participants held the opposing views on each of these two statements.

The final assertion tested in the profiling questionnaire explored opinions on the relative cost of conventional versus alternative development based on some (unspecified) range of alternative standards. As presented in Figure 4.3, some 60 per cent of participants disagreed with the statement*:* "alternative standards will be more expensive than conventional development."



The core 25 per cent of healthy skeptics were more negative on the cost implications of ADS. Notably, almost 15 per cent of participants had no opinion on this question. This may reflect the lack of strong evidence on the question of relative cost. Costing analyses are only recently beginning to appear in the literature, and even these are based on projected cost estimates. The higher proportion of respondents stating they had no opinion may indicate that the jury is still be out on this question, pending more costing analysis and actual experience.

It should be noted that, while this is not a statistically reliable sample, the attitudes on each statement do not align exclusively with particular professions. Cross tabulation of opinions by professional discipline and type of employer reveals that there is a distribution of agreement and disagreement on each of the statements *within each* discipline. This was also reflected in the discussion groups. It contradicts the hypothesis that individuals involved in the hard services - utilities and engineering - would be the more likely than other professions to oppose the adoption of ADS.

Focus Group Discussions

The following sections report on the discussions that took place in the focus groups. These findings synthesize the observations from all groups but identify specific cities when appropriate. Where participants are quoted verbatim, the quotation is presented quotation marks ("..").

As in the focus group discussion, in this chapter we deal first with the scale of the individual lot and right of way, encompassing standards related to siting and setbacks, boulevard and pavement width, utility corridors, rear lanes and parking issues. The broader issues relating to integration of various facilities including storm water management, community recreational amenities and school standards, are then presented. Finally this chapter concludes with a synthesis of the overall views about ADS, compact form and new planning approaches.

Site Configuration and Right of Way Standards

Considerable time was spent discussing the wide array of issues in the space between two building faces – lot size and setbacks, and the right of way width, comprised of boulevard and pavement (figure 4.4).

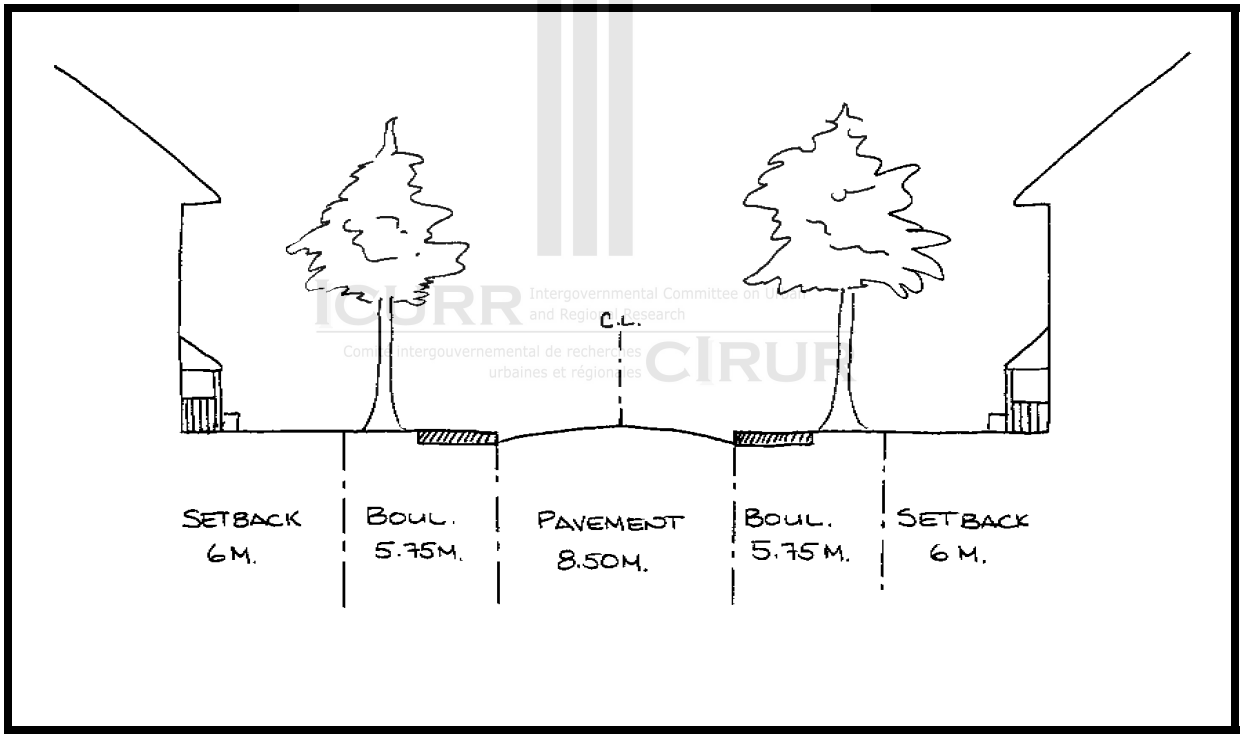


Figure 4.4 Conventional 20m Right Of Way

The site-specific interdependence of these elements was stressed. Participants cautioned that one cannot discuss a reduced setback out of context of the adjoining right of way width. Similarly, pavement width and treatment of street parking cannot be divorced

from the on-site parking requirements and setbacks that affect space for vehicle parking on the lot. Consequently, the discussion jumped back and forth between different design elements and standards.

For ease of presentation, however, the various elements are discussed here under the following subheadings:

- Site configuration (lot size and setbacks)
- Right of Way (pavement and boulevard width)
- Location of underground services
- Street trees
- Rear lanes
- Parking standards

Lot size and setbacks

Issues discussed under the heading of site configuration included lot size, setbacks and the associated issues of on-site parking, street trees and open space amenity requirements.

The single largest area of consensus from the six focus groups was that setbacks could be reduced. It was observed that side yards and front yards consume a large proportion of land, yet serve little purpose beyond aesthetics. Side yards also provide fire separation, but this can also be achieved with a firewall. There was support for reductions in the front setback from a typical conventional standard of 6m to as little as 3m. Views on sideyards were mixed, reflecting regional differences in consumer preference. A participant in Montreal observed that the attached row housing form is readily accepted in Quebec, whereas, in stark contrast, consumers in Ontario continue to demand physically detached dwellings. Consumers in Ontario centres have typically been willing to pay the premium associated with a detached home. Recently, as builders targeted the first time buyer market, this Ontario norm appears to have given way. Nonetheless, consumer preferences such as these remain a consideration in seeking to revise the side yard standards. In Vancouver, where detached home prices are prohibitively high for first time buyers, attached building forms, as well as apartment condominiums have become the norm at the affordable end of the new home market.

Smaller lots result as reduced setback standards permit smaller front yards and reduction or elimination of side yards. It was suggested several times than more efficient use of the lot can be effectively pursued through zero-lot line ("an old but seldom used technique") or through various configurations of attached units - semi-detached through to row clusters.

Some participants suggested elimination of side yards and consolidation of this space to create more meaningful and usable open space. This gave rise to a discussion about the adequacy of guidelines relating to public open space and private amenity areas in zones of higher density. In general, there was strong opposition to increased density without compensating open space amenity.

Reduced front setbacks did raise some concerns relating to trees. If reduced boulevard widths are pursued, the space for healthy tree growth is limited. Tree space is further constrained by a reduced setback. Some participants went as far as to say that the combination of reductions in both setback and boulevard width would not be desirable (unless also in combination with relocation of underground utilities to rear lanes – an issue discussed in a later section). On-site parking is also directly affected when the setback is reduced. A final concern related to safety: squeezing setbacks - notably separation distance from utility transformer boxes - created potential hazards.

Right of way

The right of way consists of two major elements: the paved roadway (curb to curb distance) and the boulevards outside the curb on each side of the road. Figure 4.5. reflects fairly typical standard 20m right of way comprised of a 8.5m paved roadway and two boulevards, each 5.75m wide. In addition to providing a route for vehicles, the right of way houses a variety of services, installed and maintained by an equally wide range of parties (Figure 4.5). As a consequence, the right of way is subject to a proliferation of development standards. The complex interaction between the actors and the standards relating to the right of way inevitably gave rise to considerable debate in the focus groups.

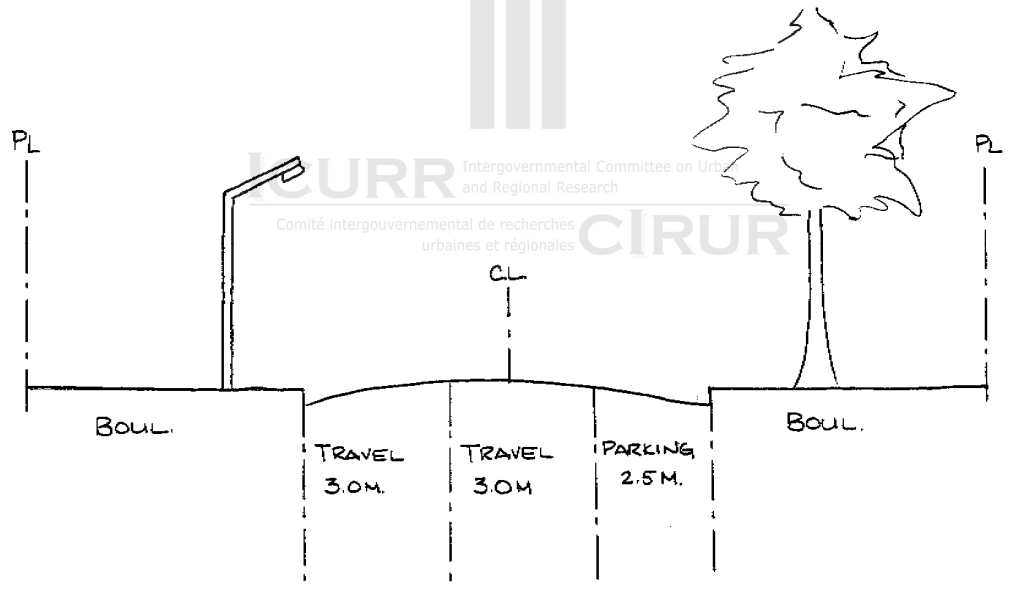


Figure 4.5 Typical 8.5m Pavement Width (two way traffic; parking one side)

Much of the discussion centered on the difference between standards and functional requirements. The pavement width accommodates both driving lanes (typically, one in each direction) and parking lanes, on one or both sides. Two traffic lanes in combination with parking lanes on one side of the street are quite usual and imply a pavement width of

approximately 8.5m (2.5m per parking lane and 3m per driving lane). Parking on both sides widens this to 11m. There was considerable debate on whether an 11m pavement width is really required on a local residential street, especially if each dwelling is required to provide parking for two vehicles on the lot. Even 8.5m was questioned on the same basis.

One participant observed that Marine Drive in West Vancouver functions effectively as major arterial, yet has a pavement width of only 18 feet (5.5m) with no curbs for part of its length. "If 18 feet works for a significant arterial like Marine Drive why is 30 feet (8.5m) required on a neighbourhood street." Similarly, in the inner city areas of Vancouver the road is only 26 feet (7.6m) wide, with parking on both sides. This has proven to be tight but functional.

Participants in Montreal felt that neighbourhood streets are significantly over designed, in part to accommodate the size of vehicular equipment such as fire trucks and snow ploughs. This sentiment was echoed in other centres with the suggestion that the alternative of redesigning service vehicles should be explored. One participant from the B.C. Lower Mainland commented that his municipality, in consultation with the Fire Department, had determined that 3.2m is the minimum passable space for a fire truck. Adding a parking lane on each side of the street would generate a pavement width of 7.6m to 8.0m (parking lane specifications vary from 2.2m to 2.5m across municipalities). The 3.2m allowance for a fire access driving lane was disputed by a fire department representative who noted that, in their municipality, a minimum driving lane width of 4.2m was required. In a different group, a fire department representative, citing a recent study of North American fire departments, indicated that the trend was toward a new type of fire vehicle that combined a pumper function, aerial ladder and emergency life support all on one vehicle (Tridata Corporation 1996). These fire trucks are designed in 75 and 100 foot lengths and, if anything, are larger than current vehicles.

As a general comment on ADS, a Fire Department representative noted that because the incidence of fires in newer buildings is much lower, it will be difficult to evaluate the impact of narrower pavement standards on response time and access. The implication was that lives should not be put at risk on the basis of theoretical savings. Although there is the usual cost-risk trade off, in the case of fire safety standards there is an inevitable tendency (especially among politicians) to err on the side of safety. As a consequence, these standards may be over designed. For example, one official noted that in his seven years in a jurisdiction, "there was not a single occasion when a fire truck had used a secondary access; the fire department will always use the street access." He therefore questioned the need for the standard requiring secondary access.

Another illustration of the lack of coordination between disciplines, and of outdated standards, was cited in relation to water distribution. It was observed by a fire department representative that the diameter of water mains is based on required fire flow. However, with sprinklering (a requirement in Vancouver) this need is reduced; rather than 8 to12 inch diameter the minimum 6 inch diameter is acceptable. Thus in municipalities where

sprinklering is required, it is possible to reduce this standard in water distribution; yet no action has been initiated to make these revisions.

Location of underground services

Relating to water distribution, the location of underground utilities was a topic of considerable debate. Typically, the storm and sanitary sewer systems are located beneath the pavement, few other utilities are located here (water distribution is the main exception in some locations). Typically the telephone, electrical service and cable TV are located in a joint utility trench (J.U.T) outside of the curb under the boulevard (Figure 4.6).

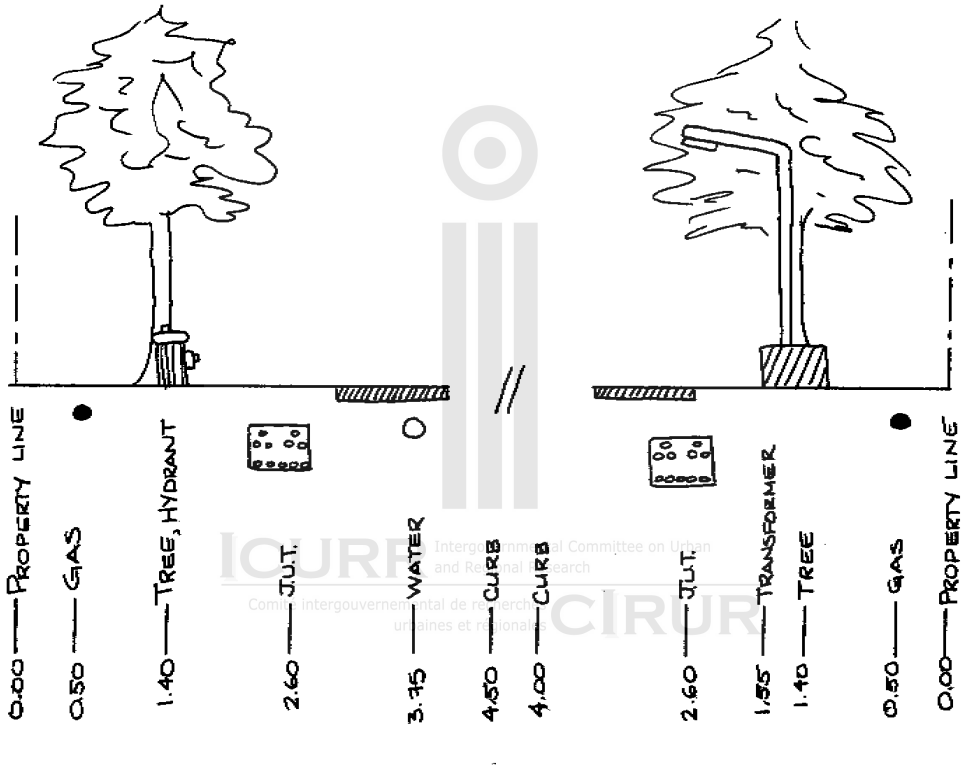


Figure 4.6 Typical Placement of Under Ground Services

Given the location of the utilities, it was argued that utility placement is not a factor in determining pavement width (between curbs); the key factors are vehicular requirements. Notably, however, one participant argued:

> *as long as underground utilities have to be outside of the curb then flexibility and opportunity for reductions (in the boulevard width) are constrained … currently,*

> *vehicular needs and (utility) service needs are separated and each requires its own space instead of making more efficient use of the entire right of way.*

From the discussion, the driving factors in the design of utility corridors appear to be ease of installation and subsequent ease in maintenance. These are maximized when utilities have dedicated corridors in the grass boulevard area. However, it was suggested that if there is a strong desire to maintain pavement width for vehicular access and parking purposes (especially in light of the increasing size of fire trucks), some consideration should be given to placing other services under the pavement parking lane. Some participants expressed concerns about the cost of tearing up pavement for repairs. This was especially an issue in the harsher climatic zones, where it was pointed out that road cuts inevitably lead to fissures and degradation of the surface in freeze thaw cycles. Road surface quality (pot holes) then become a safety issue. It was countered that this is a serious problem on collectors but is not as problematic on local streets where traffic volumes and speeds are lower.

Proponents who favoured placing some services under the paved parking lane challenged the argument that this is not feasible due to the cost of future access and repair. As one individual put it:

> *The rationale of designing underground servicing based on future access (i.e. in the boulevard) is like designing a parking lot for the Christmas Eve rush … on a local street people have to put up with a little inconvenience very occasionally. Over the long term this is not an issue.*

This point was pursued by asking engineers and utilities just how often they do in fact have to go back to excavate the services. No one articulated a clear answer to this question: the implication was that it is very seldom (i.e. perhaps once in 15-20 years, if ever). A gas utility indicated that they inspect their lines on a five year rotation (20 per cent each year) but this does not involve excavation. Another utility (hydro) noted that it was unlikely they would cut up the street except in the case of installing a new service, or on the rare occasion of dysfunctional connections or an accident damaging the service. Even then, the problem spot would be isolated. In Ontario, it was pointed out that in any ADS developments, additional ducting is required (at the developer's cost) at the time of subdivision construction, to allow for future installation of a new service. Here, future excavation would be avoided – again challenging the need to place all utilities in the boulevard.

Sidewalks

An approach that is suggested in the Ontario ADS Guideline *Making Choices* (Ontario, 1995) is to locate services in a conduit beneath the sidewalks. This suggestion generated opposition from utilities who, again, expressed concern about the cost of rebuilding sidewalks (which is higher than patching pavement).

Efforts to reduce the typical 5.75m boulevard have primarily involved elimination of sidewalks. The current standard in many suburban subdivisions retains space for a future installation of a sidewalk even though it is not initially (or, in many cases, ever) constructed. The allowance is made in the event that future residents petition for a sidewalk. It was argued that, in many suburban communities, residents are used to strolling on the edge of the road pavement. It was also observed that in these low density areas there is seldom anywhere to walk to, so that installing sidewalks in these areas has little prospect of addressing the goals of a walking community. The elimination of the sidewalk requirement is therefore seen as a relatively easy way to reduce the boulevard width.

The required width of a sidewalk, 1.5m in most municipalities, was also debated. Examples were cited where this has been reduced to 1.2m (and in one case 0.9m). The need to ensure wheelchair access was noted in this discussion. Narrowing or eliminating the sidewalk allowance on one side of the street (or both) was seen as an option, except in urban or more compact areas consistent with a walking community. The alternative of optimizing boulevard space by placing utilities beneath sidewalks was generally not well received among the utility and engineering participants.

Alternative design of boulevard and utility corridor

A second proposed alternative to relocating utilities under the pavement is to return to the former practice of placing services overhead. This would similarly reduce demand for space in the boulevard while facilitating access for servicing the utilities. Although some participants expressed concern that overhead services are unsightly, others responded that in a mature area with healthy street trees, the visual impact of overhead wires is not excessive. There was no consensus on this issue but one participate stressed the fact that:

> *The consumer is not permitted to express his choice on this matter,* [in new suburban development] *underground servicing is an imposed standard…it is not clear that consumers themselves object to overhead wires, after a while* [once trees mature] *they just blend in.*

This is one trade off that may warrant reconsideration. Indeed, a participant in one group recommended that the traditional overhead servicing approach should be explored in a future ADS demonstration experiment.

Leaving aside the possibility of relocating services overhead or below parking lanes and sidewalks, there was some discussion of simply revising existing placement within the boulevard. One municipality in the Lower Mainland has undertaken an analysis to determine how much space could be saved through redesign in the boulevard. They determined that a minimum of 4.9m was necessary to accommodate all services (gas, hydro, telephone, cable TV, street lights and water); as cable services are installed on one side only, the other side could be reduced to 3.5m for a total boulevard width of 8.4m. This represents a reduction of 3.1m (35 per cent over the typical 11.5m total).

Another approach to optimizing boulevard space is through joint trenching - installing gas in a common trench with hydro, telephone and cable TV. Gas representatives indicated a willingness to entertain joint trenching. One also indicated that some consideration is being given to installing fibre optic cable directly on the gas line. This would save space and enable gas utilities to use the fibre optic cable as a tracer line. Gas representatives added that it would even be possible to run a lateral gas line on only one side of the road, with conduits running across the road, again at a cost. Others argued against this, on the basis that these gas lines would be in the way of future excavations to repair or replace storm and sanitary sewer installations.

Narrower right of way configurations (in combination with higher density – such as in town home developments) were noted as being problematic for initial gas installation. Unlike other services that are typically installed prior to building, gas comes in last, primarily for safety reasons. With multiple construction sub trades parked on the right of way, gas installers have to take the time to have vehicles moved, an inconvenience. Again, this begs the question: who pays and what is the real cost of this inconvenience relative to the potential efficiencies that might be achieved with the reduced right of way?

One option suggested was the installation of gas lines during initial subdivision servicing, with actually hook up of the gas after construction of the buildings is complete. This has been done in some cases. Practices vary between jurisdictions, but generally the gas companies like to install their own lines, rather than have this done by the developer's contractor. The pervasive inconsistency in practice in different geographic divisions of the same utility suggests that individual attitudes have more to do with intransigence than the specific installation standards.

All in all, this particular utility (gas) was very positive and progressive about opportunities to achieve efficiencies. Nonetheless, the issue of convenience, both for utility companies and for future residents, appears to be a critical issue. Many participants felt that the public has very little tolerance for inconvenience: consumers complain quickly to officials or, more often, to councilors. This was countered with the view that in an environment of fiscal constraint, politicians are learning to say no: "The fiscal situation is creating a far greater and increasing receptiveness to change." It should be easier to accept complaints about a minor inconvenience over a half day street closing than it is over a permanent closure of a school or other public amenity. In the larger scale of trade-offs, the inconvenience argument (re need for future access) appears to hold little water.

Street trees

Although there is an obvious conflict between tree roots and underground utilities, participants were not concerned as much about damage caused by roots as they were about a more institutional issue: the requirement to have an arborist inspect and approve certain works. The process of notification and approval is an inconvenience to the utility seeking to excavate. While utility companies and municipal engineers accept the desirability of greening the streetscape, they are frustrated with this associated

administrative inconvenience. Further, they fear this issue would be significantly exacerbated in a more crowded, reduced boulevard width.

Placing the trees on the adjoining private property was proposed as a possible solution. While many felt this had some potential, others cautioned that, in combination with reduced setbacks this may prove difficult. Participants also expressed concern resident who cut down trees and about the cost of enforcing street tree protection bylaws. In Ottawa, the city has taken a proactive approach, offering saplings for sale at a low cost for residents to plant in their own yards. Although these costs are subsidized, they remain far lower than the cost of a city arborist, planting by city staff, and ongoing enforcement by a bylaw officer. In reality, how many residents do cut down trees versus the number that plant them?

In the context of reduced rights of way, the most vocal concern, outside of the Lower Mainland of B.C., was the need for snow storage. In areas where sidewalks are at the curb, the snow storage area (for both pavement and sidewalk ploughing) is typically on the pavement, straddling the curb. In suburban areas with no sidewalks, it is on the boulevard. Officials in Ottawa and Montreal expressed concern about the high cost of snow removal (required when there is insufficient storage space) relative to simply pushing snow aside until it thaws. Trucking snow away is obviously more costly, but no one has done a cost-benefit analysis of the savings associated with narrower pavement. As these are typically associated with higher density increased property tax revenues might partially offset the cost of snow removal. It should be noted that many jurisdictions prohibit on-street parking between December and March, when snow banks force cars to intrude into the driving lane. In these cases, the parking lane becomes available for snow storage, but space for vehicle parking is required on the lot.

Rear lanes

The option of rear lanes is being promoted by proponents of neo-traditional development. In older areas, the lane is seen as a key element underlying the more attractive front streetscape. There is, however, a divisive conflict between professions on this issue. Generally urban designers, concerned with the appearance of the streetscape regard lanes as positive elements. They are a place to hide unsightly elements such as cars, utility transformers and garbage pick-up. Removing cars from the street also reduces the interaction of vehicles and pedestrians. This was seen by some as a way to address the concern of safety raised by narrower streets and parked cars. The opposing camp, comprised largely of engineers, utilities and developers, but also some planners, expressed fear that the costs simply do not warrant the aesthetic benefit that this approach provides. Moreover, these professionals contended, there has not, to date, been a public outcry over the image of the standard suburban facade that seems to irritate urban designers. Because, this is not a serious marketing issue, at present, developers have limited incentive to change the predominant design, let alone absorb the high cost of the alternative.

It was suggested that some utilities, most particularly the combination of cable TV, telephone and Hydro services, can be relocated to the rear lane, thereby permitting reduced width of the utility corridor in the front boulevard. Pedestals and transformers can also be located in the rear lane, to help overcome the complaints of consumers who arrive at their new home only to find the view from their front window dominated by a transformer box.

These potential benefits notwithstanding, numerous concerns were voiced about this option. These are summed up in such comments as "throw away the lanes .. they just don't work" and "Lanes are awful places...a spot just waiting for delinquency to happen .. look at all the concealed places."

Where vehicular access is the primary function of the lane, snow removal is clearly a critical problem. A number of serious constraints were pointed out: "this is an additional area requiring clearing," "it is difficult to push snow down the full length of the lane," "storage space is limited or non existent," and "there may be liability for damage to abutting fences and garages as snow is removed in constricted areas."

Snow is seldom an issue in the Lower Mainland of B.C. and participants in the Vancouver focus groups initially agreed, by show of hands, to the suggestion that lanes should be used more often in new suburban developments. However, this initial acceptance was eroded when participants viewed slides of recent developments with lanes. The images revealed fences or garages built to the property line/paved edge. Transportation engineers expressed concern over lack of site lines. In all cities, there was some discussion of safety due to many concealed hiding places. Utilities expressed their earlier concern about access to maintain services located in lanes with such tight fences and building lines. Here, they felt, the inconvenience problem would be worse than on local streets, as the entire lane would have to be shut down.

Engineers in all cities questioned the level of standards required in the lane. A paved lane will require curbing and catch basins for storm water, adding to development costs. The most critical comments questioned the basis for the lane. The slides of a development in B.C. revealed that the combination of the lane and fronting street requires more pavement area than the street alone. Many observers noted that retaining the full standard pavement width in addition to adding rear lanes, as had been done here, was far too expensive to justify and that the higher costs could only be justified in upscale development where house prices paid for this aesthetically pleasing feature.

In combination with smaller lots, the location of parking off the lane severely constrains the already small rear yard. Although garages provide some privacy screening, the remaining yard space is often no more than an apartment patio deck. Developers had some reservations about the marketability of a product which no longer has a usable rear yard – one of the most desirable features of the detached (and even the row) dwelling.

Again echoing the cost concern, it was suggested that design elements such as lanes that can work very well in special higher priced communities (such as the often cited Seaside Florida) "no longer function when you cheapen the product up at high densities."

Parking standards

The key issue that arose through the discussions, and has already been alluded to, was the perceived excessive allowance for parking of vehicles – both on-street and on-site. Although many inner city municipalities require only one on-site parking space per dwelling, the standard in suburban areas is almost always two spaces, and in some parts of Greater Toronto, three! Yet this is required at the same time that a pavement width of 8.5 to 11.0m also prevails, creating more than adequate space for on street parking . There was a solid set of opinions in favour of a compromise between on-street and on-site parking. It was suggested in one group that "if people choose to have a second car they must accept the risk and inconvenience of parking on the street." Many participants commented on the fact that garages are frequently used for storage and residents do park in the driveway or on the street. Thus, continuing to require the garage may not always be necessary, however, giving up front yard parking areas (through reduced setbacks) may be problematic.

In more cautionary interjections, participants in Ottawa and Montreal each cited cases of town home developments where a lack of street parking was a concern for residents. They suggested that it may be possible to reduce *either* on-site requirements *or* pavement width (i.e. the parking lane), but not both. In Montreal, residents in one development have reacted to insufficient parking by paving additional areas of their front yard because "in the suburbs people don't want to park on the street." Reductions here might be better focused on reducing pavement width while retaining adequate on-site parking.

Representatives from the development industry indicated that, in most newer suburban areas, consumers will not accept less than two parking places. However, they see this as a marketing issue. Standards could be reduced to a single vehicle and developers would still have the option of designing for two spaces. It was also suggested that permitting on-street parking is desirable to allow future conversion and installation of secondary suites or apartments in homes. Notably, however, not a single municipality in Canada will permit a (legal) second suite without imposing the requirement of a second parking spot, so this argument in favour of parking lanes on the street is moot.

A further observation was that many new developments are targeted to the first time buyers with both the lot and the dwelling already reduced in size, and little, if any, potential to add a second unit on the lot. In such cases the lot and street parking specification can reasonably be reconsidered, to allow for parking in either location – e.g., one on-site and one on-street, or two spaces on the lot and no street parking.

Storm Water Management

Street dimensions and the total area of paved, impermeable surface (including driveways and car lanes) have direct consequences for rain water runoff and management. A number of alternate standard approaches were presented to stimulate the discussion of storm water management. These included alternative measures first at the scale of the individual lot and secondly at the community level. It was noted that the primary goal of current standards is on rapid containment and chanellization of water into a storm trunk and subsequent discharge area.

At the level of the lot, of overland flows or sump pumps with discharge to dry pits in rear yards were identified as alternatives to tying foundation drains and down spouts into the storm sewer. This was combined with the use of swales to cause local ponding and subsequent infiltration into the water table. At the community level, the use of dry ditches, swales and detention ponding was examined. In each case, the objective was to provide a more environmentally benign approach, as well as to reduce the required capacity, and installation costs, of the storm water system.

There was general sympathy for approaches that might have a beneficial environmental impact and a number of jurisdictions, in all three regions, noted that certain ones are already being used. These include splash pads, sale and subsidization of rain barrels and, in some jurisdictions, landscaping workshops directed in part at reducing runoff. Landscape architecture charettes have recently been conducted in the B.C. Lower Mainland to increase awareness and promote natural drainage approaches.

At the community level, the increased use of detention ponds was generally recognized as something that is already occurring. The extent to which such facilities can, or should, be treated as open space amenities was another issue, and is discussed in the next section.

The primary concern with alternative storm water management approaches at the lot level related to lack of control. The effectiveness of such approaches depends heavily on the attitude and behaviour of residents. As occupants change over time, there is no guarantee that the natural drainage systems being advocated will continue to function. Landscaping and construction of retaining walls that eliminate designed swales and revise the grading are inevitable. Subsequent upstream development can also affect overland flows, and may unbalance the local lot level design.

The associated concern is one of flooding and damage to homes, especially when water flows from one lot to another. Although this may be a civil matter between two or more neighbours, municipalities are very wary of liability and litigation in this area and desire to avoid the problem if possible. The preferred approach is to engineer a long term solution that is independent of the occupant(s).

Community-level storm water management systems were readily accepted as a necessary practice and there was little opposition to such approaches. However, at the individual lot level, there was a strong consensus across all groups that the consumer is not yet sufficiently educated or willing to implement more natural forms of storm water

management. The potential of these approaches over time depends on two factors: the extent to which municipalities or community groups have the resources to educate residents on this topic, and, second, the way risk management is conducted. Currently the municipalities fear complaints, political interjection and, at worst, litigation. Even though storm water systems represent a significant part of infrastructure costs, there is little analysis and, thus, no hard evidence to demonstrate cost savings in storm water infrastructure to offset these risks.

Overall Urban Structure: Integration of Institutional Facilities

The opportunity to achieve efficiencies through the combination of a variety of standards was illustrated in a number of examples. These included the alternative plan for the Ottawa-Carleton case study, the Peel School Board example, and a number of images of combined storm water detention-recreation sites, including the option of locating playing fields in 50 and 100-year flood areas.

There was relatively strong support for integration of facilities as this was seen to provide more efficient use of resources.[1] Many municipalities indicated that this is a common practice in their jurisdiction. In Richmond B.C., the integration of community and school facilities is now *the* standard. Many municipalities also locate their storm water detention ponds in open space areas, and actively develop these as recreation amenities. Although participants believed this to be a sensible approach, they also indicated that although the impacted jurisdictions – schools, parks and recreation and engineering - accept such integration, their first preference is to have an independent facility. As a result, there is little leadership in this area and it takes another party, such as a municipal council, to impose the solution.

Although concerns were not overwhelming, participants noted the issue of design and maintenance standards on sports fields. Some commented that combined school and community use will exert more strain on fields, and leave little time for playing fields to regenerate.

A more contentious suggestion was that recreational use should be made of storm water facilities and, conversely, that recreational areas should be used for storm water retention. Here, the practice of municipalities differed greatly. Some made it a core goal to optimize the use of open space through a dual purpose approach. Others raised concerns about liability: a case was cited in which someone had died by falling into a detention pond. This case related to the poor location and design of a path. As the more litigious culture of the US migrates across the border, there may be some basis for these concerns. On the other hand, good design can overcome many of the problems; and if dual facilities are cost effective, they should be able the bear the small price of ensuring designs are

1. It should be acknowledged that no representatives from either recreation or school boards were present to debate this view.

functional and safe. Again, the issue was cast as a question of costing and risk management.

The previously discussed problem of high public expectations and inconvenience was reiterated in the issue of public complaints when sports fields are flooded. In many growing communities, sports fields are heavily booked and a few days out of service can cause difficulties. One municipality indicated that it was seeking to address this by privatizing some sports fields, making the real cost of this public service less transparent. Privatization would also generate the revenues needed to ensure field maintenance.

Opinions on Compact Form and Integrated Urban Villages

Recent efforts in new urbanism and more compact urban form, commonly associated with alternative standards, were a frequent topic of debate in the focus groups. Most participants had some level of awareness of the current trend toward these planning and development approaches. A number of skeptics expressed concern with the "evangelical or missionary zeal" with which these approaches are promoted. They were particularly perturbed about the transplantation of very specific concepts onto "just any suburban greenfield site"

Proponents of these more compact urban villages reflected a degree of frustration that the goals of mixed use compact form continue to be thwarted by the inability of these developments to achieve the critical mass needed to sustain the commercial core that is central to the concept. Although designed as mixed use, inclusive, compact communities, the few known examples were seen to be falling well short of this goal: most are still exclusive residential estates with all the shortcomings of the conventional suburb they purport to displace. They remain segregated and car-dependent. It was pointed out that while recent publications on ADS (e.g., Ontario Ministry of Housing 1995; Berridge et al 1996) speak about mixed use, attracting the commercial retail component is accorded only passing attention. It was suggested that more emphasis must be placed on highlighting the development economics of mixed use compact form, especially in isolated greenfield sites.

Participants generally believed that there is a place for this more urban compact form of development, but that it should not be promoted everywhere or regarded as a panacea. There was an indication that such experiments are currently misplaced. Even in a large developments that could potentially have a critical mass, the phasing of development makes it very difficult to realize the goals of new urbanism in the short term. Someone commented that:

> *It makes much more sense to take this approach in an urbanized infill site where the opportunities and destinations for a pedestrian oriented community already exist.…In outlying greenfield locations it is not economically feasible for a developer to build the neighbourhood retail commercial core that is integral to the success of these developments.*

According to one participant, locating post office super mail boxes in small convenience stores is one approach to achieve a commercial mix that has already been tried in

Mackenzie Town (Calgary) and is proposed in the Cornell development in Markham. This approach is expected to generate a higher volume of consumers to the location, to sustain local retail and, ultimately, to stimulate the walking community. Another way to augment the initial development of a neighbourhood core is to use civic facilities, either recreational or cultural institutions or municipal offices. Although not promoted as new urbanism, the Centre Point community in the Nepean suburb of Ottawa has successfully used this approach to provide a commercial hub linked with a wide range of residential building forms, from detached homes to apartments.

It was suggested that the planning profession can, and should, play a pro-active role in carefully designating potential sites in the official plan as experimental compact communities. The official plan designations can also seek to integrate the transportation master plan, to ensure that the sites identified are well served by transit and can be accordingly designed. The publication of development guidelines would go a long way to providing developers with a better sense of what will be entertained on these sites and can effectively streamline the approval process for the non-conventional site. An example are the design guidelines adopted in the City of North Vancouver (City of North Vancouver 1995).

In addition to selectively identifying more appropriate ADS sites, the idea of "cherry picking" the more feasible elements of ADS was raised, notably by a developer. The perceived problem with many new urbanism designs is the imposition of architectural elements and urban design that are "transposed from a time of the horse and cart":
"People today live varied and harried lives…. they are highly mobile and live lives that inevitably revolve around their cars." As much as we would like to reduce the impact of automobile dependency and the associated environmental impacts the sentiment was that we must plan to accommodate the car better and reduce dependency slowly: "the public needs to go through a transition to the walking community, its an evolution." Accordingly, "an attempt has to be made to cherry pick what is good from these designs and apply it in a context of the economics of the day."

It was suggested that this approach might include extracting certain design elements. Thus, one could (marginally) narrow the right of way width. Rear lanes were seen as an excessively costly way of addressing the undesirable, garage-dominated facade of conventional suburbia, but there was interest in adopting some of the urban design principles that seek to reduce the dominance of the front garage in the streetscape, to aid in marketing .

On the other hand, it was suggested that piecemeal experimentation with alternative standards may be an error. Without the support and synergy of other design elements, certain features do not function as intended and therefore will probably fail. Recent examples include greenfield developments with very urban streetscapes, including lanes, shallow front yards, and verandahs. Because these sites are isolated and exclusively residential, car dependence remains high. Arriving at home by the rear door, via the lane, means there is no more (and may be less) opportunity to socialize and meet neighbours in the front street. In the short term, these developments may well fail in achieving their

own objectives. A greater concern is that they may undermine the efforts of others, as lenders carefully monitor the success of these new products.

Challenging the Need for ADS

The fundamental premise of both alternative development standards and the variations on new planning approaches were challenged in almost every one of the focus groups. In each session, one or more participants questioned whether alternative standards are really necessary. They also questioned the expected results. However, theirs was a constructive skepticism. Typically taking the form of a concern over the wide scale adoption of ADS, it was combined with strong support for more selective reform and use of alternative standards in controlled situations.

Those questioning the efficacy of ADS argued that, to date, there is little hard evidence to support the arguments that ADS reduce costs - either initial capital costs or longer term operating costs and maintenance expenditures. This argument was based in part on the few studies that have attempted to cost out comparable alternative and conventional plans. In such cases, the total cost of development in the alternative plans is higher, although costs are often lower on a per unit basis. This contention inevitably generated considerable discussion on the prospect of actually achieving the densities that make ADS cost effective. Are consumers prepared to accept these densities, especially in suburban areas where they are being proposed? Some participants were critical of "misguided and unrealistic social engineering efforts," but they did add that closer and more frequent interaction would be useful in educating both sides to the dispute: "until social engineers and municipal engineers start working together nothing will work."

When potential cost saving were cited, in one session, to justify ADS and more compact form, a participant rejoined, "more efficient for whom." The same issue arose, albeit less directly, in other sessions. There appears to be some friction in terms of who benefits and who pays in the trade off that is implicit in revised standards. As the Ottawa-Carleton infrastructure cost study revealed, the savings in emplacement costs flow primarily (60 per cent) to the private developer; the public savings are only projected to accrue over time, through lower operating and maintenance costs. Some participants doubted that this potential public savings would ever materialize, while others suggested that maintenance costs might actually increase.

A net density increase can increase open space for parkland and recreation. However, if this higher density means smaller units in closer proximity to each other, it is a potentially less marketable and less profitable development. So, what is the incentive for the developer? Alternatively, if road rights of way are narrowed so that a developer may save in road costs as well achieving a gross density gain and, thus, more sales, is the municipality compensated for the higher maintenance costs, such as trucking snow away? And, are the higher municipal operating costs offset by higher tax revenues from additional units? These are two simple but recurrent questions that underline two critical problems: the lack of sound costing analyses; and, second, the absence of an effective mechanism to fairly allocate both short term and life cycle costs and benefits between the

parties. As long as each side continues to feel that it is not getting a fair deal, neither side is likely to champion a change in the process; it may even oppose change.

The municipal concerns often hinged on the perceived long term liabilities imposed on the municipality. In an environment characterized by "cut after cut" in municipal operating budgets, municipal officials are extremely, and increasingly, "gun shy" of any development proposal where there may be even the slightest risk of downstream cost repercussions on the municipal operating budget – whether for snow removal, installation of a sidewalk, or flood damage.

One Montreal participant noted that the form of development should not be dictated by an ineffective or imbalanced taxing structure. The municipalities, however, felt hamstrung by both legislative and political pressures: in the trade-off between capital and operating costs, the cost burden shifts from the developer and consumer to the taxpayer at large. There is some reluctance to ask the general taxpayer to bear the cost of increased maintenance if the municipality did not generate a compensating benefit from the development (such as appropriate future tax revenues or the funding of an off-site community amenity). This gets more problematic as efforts to produce a more affordable product have contribute less to the tax base.

It was noted more than once that the costing studies undertaken to date have examined the infrastructure costs but have not yet investigated the associated revenues - development charges and property taxes - to determine whether the development results in a net cost or a net benefit over the longer term.[1]

Financial benchmarking in municipal operations were also cited as an important emerging force in the promulgation or rejection of alternative standards. In Ontario, for example, it was reported that the Auditor General is implementing guidelines for asset management that will require municipalities to balance short and long term costs with the revenues from development cost charges and property tax. Inevitably, this will require a more careful costing analysis on the part of municipalities.

A possible consequence, driven by the desire to avoid municipal liabilities, will be the increasing privatization of public spaces such as rights of way and, even, roads. A Vancouver development is a case in point: in an ambitious redevelopment of an industrial precinct in the heart of Vancouver, a minimalist approach is being applied to the street right of way system. More than half of the rights of way will fail to meet the city's minimum standard. The city plans to designate these as private lands but impose a public easement over the corridor. Numerous other examples were identified in which certain design standards are significantly reduced in condominium or bare land strata developments. In many cases, these developments are functional, and the municipality

1 Concurrent with this study, CMHC has commissioned a two part study to examine this cost issue: *Conventional and Alternative Development Patterns. Phase I: Infrastructure Study and Phase 2: Municipal Revenues.* These should be published by mid-1997.

should be saved harmless from future costs. The private condominium corporation pays the costs of garbage removal, road cleaning and, where applicable, snow removal.

Although such privatization should limit financial impacts on municipalities, there are other ramifications, notably political. In a recent bylaw hearing for a new development applying for reduced right of way and parking standards, residents from an earlier alternative development, based on similar standards, appeared and spoke against the proposal. They complained that the site plan just did not work: difficulties were primarily related to the shortage of parking and to lack of space to store snow. A focus group member suggested that this was a good example of pushing alternative standards too far. The combination of "reduced everything" resulted in an overcrowded site, dissatisfied consumers, and a bad precedent that may undermine the ability of future efforts to gain approval.

It was suggested that the problem is partially due to the fact that consumers often do not fully realize what they were buying into. Most buyers look at a model home in a field. Even though marketing emphasizes the community qualities and amenities, these often do not exist at the time of sale. The household decision is made primarily on the basis of the quality and amenity of the new home itself, with less emphasis on the community. This raises a useful flag to both planners and developers about ADS developments: it seems important to stress the nature of the whole package. The adage of buyer beware imposes an obligation on the proponents of such developments to make the buyer aware of the overall site design and its implications.

It was posited that ADS are simply tools to achieve higher densities. Most of the problem cases cited above related less specifically to the fact that ADS were involved and more to the result of pushing density too high, without appropriate urban and engineering design. Again, some participants in almost all sessions questioned the fundamental need for increased density. They were concerned that it would be difficult to change the pattern of resistance to higher densities both among potential consumers and, perhaps more significant, among current neighbours.

Chapter 5: Summary and Conclusions

General response of professionals to alternative standards

Overall, the focus groups uncovered a strong desire for reform in the planning and development process. In written questionnaires, three quarters of participants strongly or mildly agreed with the statement, "We can no longer continue to approve and build the conventional subdivisions of the past." Two thirds also agreed that "significant revisions is required to a number of development standards."

Although this view was shared by all professions, it is notable that dissenting, or at least cautionary voices were raised from every discipline. The primary concerns were in relation to the perceived missionary zeal with which some proponents were promoting the new planning approaches with which ADS are largely associated; the absence of a market reality check on these proponents; and the overuse of alternative standards in a specific context.

Support was positive where ADS are presented as opportunities - a menu from which appropriate elements can be selected based on development objectives and the specific context of a site or planning area. For example, the Ontario guideline, *Making Choices* (Ontario Ministry of Housing 1995), is seen as a constructive and useful document. The critical point brought out in almost every discussion was that it is not the individual standards that cause concerns ,but rather the process by which current standards are set. "We don't need alternative standards, we need more flexible standards," articulated one participant.

Where there was opposition, it was premised on constructive skepticism and two key related issues: Are long term cost efficiencies actually achievable? And, to what extent are these efficiencies solely a function of increased densities averaging down what are in fact higher absolute costs? It was clear that the jury is still out on the cost effectiveness question. While a number of recent research studies have begun to explore this question, a larger body of evidence seems required to make the case more convincing. Moreover, the studies to date present only half of the cost-benefit equation. They detail the costs but have not yet addressed the revenue side, including the revenues to the municipality in the form of up front development charges and ongoing tax revenues, as well as the net sales revenues to the developers.

Based largely on anecdotal evidence, there was an expectation at the outset of this study that the greatest resistance to alternative standards would come from the hard services - engineers and utility companies. While a number of concerns were indeed raised by this sector, there was also a degree of willingness to explore new ways of installing services. At the same time, the rationale provided in defense of current positions and practices was in many cases susceptible to challenge. Variations in practice (often in the same utility operating in a different geographic zone) reinforce the weak basis for a number of existing standards. While the civil engineers and private utilities are unlikely to lead

reform, there appears to be a willingness to accept some change – they may be reluctant accomplices.

Although the focus of the discussion was on the attitudes of professionals, resistance of residents to rezoning and intensification was frequently cited as a major barrier to the implementation to new approaches. This is particularly the case when the new form of development is premised on higher density, and, even more so, when one of its aims is to procure a more affordable product.

There was a strong plea for urban design guidelines to ensure that higher density is delivered with higher quality. Poor urban design is less noticeable at low density; it is increasingly intolerable as density increases. Also related to resident attitudes, most participants agreed that, despite all of the reservations about the automobile, cars are a reality in our society. While there may be a small niche market for consumers less dependent on a vehicle, most households feel they need a car. The norm today is one of "mobile and harried lives in which the automobile remains largely indispensable." The walking community appeals to planners and environmentalists but is not a solution for all of suburbia.

Which alternatives are acceptable

Alternative standards seen to be promising and meeting with reasonable levels of support included reduced setbacks, modest reduction in pavement width, joint trenching of utilities, savings in the width of the utility corridor, optimizing street and on-site parking, and integration of institutional uses. In each case, it was stressed that any reduction in standards should be made in the context of the particular site. It was suggested that it may be appropriate to establish alternative standards that are conditional on certain characteristics of a site and the way in which each proposed alternate standard will relate to other design elements.

Through the range of detached to medium density attached developments, the front yard (and where applicable) side yards were generally seen as having only limited usefulness. Reduction in front setbacks, potentially from a typical six metres to only three metres, was the one area where no dissenting opinions were voiced; but someone suggested a possible compensating trade-off: increasing the per cent dedication for open space to ensure that the saved area is used, in part, to enhance the quantity of public amenity space.

Although there was less unanimity, the idea of either reducing pavement width or accepting street parking as part of the requirement for the adjoining lot, appeared to have some potential. Conversely, if on-site parking standards are to be retained (typically at two spaces per dwelling) then the provision of a parking lane on the street is redundant and pavement width requirements could be reduced accordingly.

Based on an apparent willingness of utilities to accept joint trenching, there is potential to save some space in the boulevard. Moreover, although there was continued resistance to locating the utility trench either under sidewalks or under the road , there appears to be a case for pushing utility companies on this issue. Opposition to locating services under the paved parking lane of the road appeared to be based entirely on an unsubstantiated "need" to access the service at some point in the future, and on the higher costs of access when services are located under pavement rather than under grass boulevard. The frequency of re-excavation in local streets seems very low. Given that participants were unable to cite a frequency, this merits further analysis.

Much of the work on alternative standards emphasizes changes in residential areas. Although subdivisions are now more often mixed use, and segregated zoning is being eliminated, little attention is being paid to the non-residential areas. In particular, the single largest component of infrastructure cost is the provision and operation of the capital plant of schools. Given the pervasiveness of the NIMBY problem in residential areas, and in light of this very significant cost ratio, more attention should be diverted to the issue of regional standards as they relate to schools and other community facilities with which schools might be integrated

The nature of concerns: the barriers to alternatives standards

For the most part, lack of support for alternative standards was not categorical, but was premised on a set of concerns specific to each area discussed. Addressing these concerns may open options for more extensive implementation of alternatives. In some cases, there was fairly strong resistance, suggesting that efforts would be better spent on more promising areas.

The most notable area that was challenged was the idea of rear lanes. Most participants recognized the beneficial influence of rear lanes on the dominant facade of conventional suburbia. However, when analyzed, the concerns far outweighed this benefit. Rear lanes are seen as unsafe, expensive and dysfunctional. They erode the privacy of the rear yard, and there is seldom any compensating reduction in the fronting street width. Rear lanes are not seen as the only (or even an appropriate) solution to the undesirable dominance of the garage in the suburban facade. Other options include shallower, wider lots, providing parking less visibly to the side, and privatizing internal lanes within freehold condominium developments.

ADS are often presented as cost saving measures, but many participants noted that the urban design elements favoured by pioneering neo-traditional developers have generally been implemented in higher priced developments (most of them in the United States), that could readily absorb the higher cost associated with high design standards. It was suggested that "this begins to unravel when your objective is to cheapen up the product." When trying to achieve affordability goals, there is a tendency to bundle together too many alternative standards - small lots, reduced setbacks, narrow streets, and constrained boulevard space. One result is inadequate parking and a lack of space for snow storage.

Participants felt that the right combination of ADS and their longer term implications for operating and maintenance standards need to be carefully considered.

A closely related concern was sensitivity about excessive density. While there was general acceptance of the principle of using limited land more efficiently, many participants worried about pushing density too high. This was, again, related to difficulties in gaining public acceptance of rezoning or Official Plan amendments to facilitate intensification. The implication was that ADS can be effective, but if implemented in combination with too much density, can be counter productive.

There was also concern that alternative developments are being planned in the wrong places. It is extremely difficult to achieve a compact walking community in an isolated greenfield development where there are currently no destinations. Most early efforts are still exclusively residential estates with all the shortcomings of the conventional suburb they purported to displace; they remain segregated and car dependent. It was suggested that selective choice of appropriate infill sites in more urban locales, or in mature suburbs, would be more sensible and feasible. Here, there would already be commercial and retail facilities and transit, ideally within walking distance. Public facilities (including recreation, civic or post office functions) might also be employed strategically to create the critical mass of non-residential uses.

The most constraining factor on the reduction of pavement width is the size of vehicular equipment – notably fire trucks and snow ploughs. Participants argued that it would be necessary to redesign and reduce the size of the vehicular equipment. Apparently, fire departments are themselves examining opportunities to achieve efficiencies in equipment redesign. Unfortunately, fire departments, operating in relative isolation from the planning and engineering debate, are moving in the opposite direction - toward larger vehicles. Because municipalities place a high priority on saving human lives, they have been, and probably will continue to be, reluctant to pressure Fire Departments to reduce their standards. Few studies seem to be available on the cost benefit per life saved of alternative equipment.

Institutional and regulatory framework

Alternative Development Standards are a multiplicity of individual rules and regulations that have evolved over time under the auspices of prevailing legislation. Often, actors at a local level desire to do things differently but find themselves constrained by inflexible and sometimes out of date legislation. The Municipal Act or equivalent sets the broad framework for planning and development in each province. In B.C. it was pointed by a provincial official that the Municipal Act is out of date. Not only does it fail to encourage compact urban form (beyond a requirement for orderly development), it precludes one of the primary principles of the emerging new planning approaches – mixed use. In his words, “The (B.C. Municipal) Act provides for the establishment of regulations and standards by zone – it does not countenance the possibility of actually mixing uses.”

Municipalities have been able to circumvent this restriction with the establishment of comprehensive development zones, but a concern was raised that there is now a proliferation of such zones, and there is a fear of them becoming unwieldy. Future change in these zones will require zoning amendments on a zone-by-zone basis. It was argued that reform of the enabling legislative framework at the provincial level is a critical parallel process that is required to support the development and local implementation of alternative standards.

Others maintained that Comprehensive Development (CD) zoning provides distinct benefits in terms of commencing with a blank sheet which maximizes flexibility. While some developers welcome this opportunity and are happy to work with the planners to create a workable site specific design solution, others expressed concern about the uncertainty and time delays inherent in this approach. It was suggested that this works well for the large development company with deep pockets (that can take the time to negotiate a CD bylaw through layers of approval authorities) but cuts out the small developer.

Beyond legislative issues, an informal institutional framework has evolved around the development process. Certain practices and norms have become accepted not because of regulation, but due to familiarity. Discussion touched on this issue in the potential to reduce the right of way width. Private utilities have established certain practices, such as the order in which utilities are located out from the property line and the separation between different services. Both have become institutionalized.

The over-specification of engineering standards was raised as an issue in every focus group. The tendency to gold plate standards is a natural consequence of the institutional framework within which infrastructure is funded. It is the developer who pays the cost of installing the public utilities (except gas which typically does its own installation at its own cost). The developer also absorbs the cost of constructing the trenching into which private utilities lay their services. Subsequently, the municipality and utilities take on the operating and maintenance costs. The developer has the greatest incentive to reduce the installation cost but no incentive to minimize lifetime costs. Conversely, the utility and municipality have the opposite incentives. Consequently, they are systemically prone to over design and over specify capital installation (for which they do not pay) in order to minimize the lifetime costs in which they are implicated.

Ultimately, the utilities will place their services in the space provided by the developer. For their part, approval authorities must provide the latitude for the developer to challenge the private utilities on what have become standardized practices. In parts of the Ottawa-Carleton region where ADS have been implemented the developers have been required to install, and pay the cost of installing, a conduit for future services (at the insistence of the utilities and municipal engineers). As this limits the need for future excavation, there should be less resistance to locating these utilities in a joint trench beneath the sidewalk or the pavement.

A larger institutional impediment is the comprehensive costing of alternative development. A number of discussions touched on the issues of relative costs, potential savings, the relative effectiveness and inequities of a general tax system compared with user fees, and the question of who benefits from savings. It was suggested that the current mechanisms for costing development and generating revenues do not lend themselves to a more efficient system. If anything, they are counter productive. A revision in standards that generates a free school site, as demonstrated in the Peel example, will seldom even be identified because each department and jurisdiction budgets and sets fees in relative isolation. If ADS mean a higher cost to truck snow during the winter, the municipal engineer will resist the specific subdivision application. His budget is constrained, and the fact that a free school site might be achieved, in part due the narrowing of the right of way, does not change the fact that he is faced with an increased operating budget. Even if he were aware of the broader benefit (which in all likelihood he would not be, as it is part of a completely separate jurisdiction) there is no incentive mechanism to sway his decision. Without a more holistic and comprehensive costing and benefit framework, individual and isolated budget decisions will nullify the potential for collective benefit.

These discussions highlight the key finding that alternative development standards are only tools. The more fundamental problem is the institutional framework. The key to better development - development that is more sustainable in economic environmental and social terms – is a more flexible process where innovation and experimentation are both encouraged and facilitated by enabling legislation, and, where the financial framework takes into account the externalities of individual funding or expenditure decisions.

In moving toward such a facilitative and more permissive institutional framework, it is critical that the various design and approval disciplines, interacting more closely with the development industry, begin to identify potential areas of net gain. The Peel Region School Standards study (Peel Regional Municipality 1995). gives a theoretical example of this approach and describes its potential benefit; but implementation of the scheme would require some capacity to reallocate savings and costs across departmental and jurisdictional lines, and this in turn would entail some restructuring of the financial and legislative framework within which each discipline or department and level of government functions. The financial framework must evolve to a more comprehensive one in which the beneficial effect of a revised standard or practice by one department does not result in a penalty. Rather, there must be a tangible incentive to co-operate and collaborate.

Directions for future research.

This research presents findings based on a qualitative investigation. By its nature it is exploratory, not conclusive. Future studies along the following lines would be useful:

1. A detailed analysis of the costs and benefit of ADS (including revenue impacts)
2. Research on the relative impact of ADS and higher density

3. Evaluation research on existing/ongoing alternative developments
4. Analysis of the parking requirements and potential to place services under the pavement (frequency of access needs to be examined).
5. Exploration of organizational and administrative mechanisms capable of allocating costs and benefits of ADS equitably and of overcoming institution barriers to their implementation.

The issue of costing remains inconclusive, suggesting the need for a broader empirical base. Building on recent preliminary research, future studies should full analyze both the infrastructure costs and also the revenue impacts of ADS developments, for all parties involved – the developer, the utilities and municipality.

Some review of practices relating to access and excavation of underground services would assist in the development of alternative and more optimal design of utility corridors. In particular, the frequency and extent of excavation on local streets should be examined. Does the frequency of accessing the underground services justify the current practice of placing services only in the grass boulevard? It would also be useful to review requirements for on-street and on-site parking: the consensus was that land is being wasted because these spaces are currently used inefficiently. What is the need and cost of Providing exclusive corridors for street parking and for underground services?

Most significantly, this study uncovered a willingness on the part of each discipline to consider redesign of existing standards, so as to achieve some savings and efficiencies. However, efforts at reform are often precluded by the fragmented nature of the development process. There are few incentives but many disincentives to innovation. The institutional impediments to planning reform need to be carefully identified. New mechanisms to coordinate and arbitrate for common benefit should be explored. Specifically, potential models to facilitate comprehensive costing and equitable allocation of the costs and benefits of various alternative standards should be investigated.

Many participants in the focus groups indicated that they had had very few opportunities to dialogue on these issues with such a diverse set of interests, drawing both from other disciplines and other jurisdictions. It was felt that more group interaction, such as had occurred in the focus groups, would assist in increasing mutual understanding and in developing practical alternatives. This is something that any organization could readily initiate.

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