

Private Streets: A Survey of Policy and Practice

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Résumé

Les résultats d'un inventaire de rues privées établissent que plusieurs municipalités canadiennes démontrent un manque d'accès à l'information concernant le développement sur les rues privées ou qu'il est difficile pour ces municipalités de fournir ces informations d'une manière expéditive. Quelques communautés affirment que le développement sur ces rues est considérable et admettent avoir des soucis concernant les implications potentielles. Cette étude démontre que la tendance du développement sur les rues privées est en voie de croissance.

Mots clés: rue privée, condominiums, inventaire, forme urbaine

Abstract

A survey on private streets in Canada indicates that many municipalities lack ready access to information about the extent of building on private roads, or are unable to provide such information on short notice. Some communities report considerable development on private streets and admit concerns about the implications of this urban form. The study illuminates the growing trend of development on private streets.

Key words: private road, condominiums, survey, urban form

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The role of the street

The street is a key element in the form and function of the contemporary city. Streets facilitate the movement of goods and people. Westerners learn to navigate the city by using street names for way-finding and following public thoroughfares that lead to key destinations. Streets also occupy a significant part of the spatial area of our settlements and provide right-of-ways for vital public services like water and sewer, and for utilities like electricity and natural gas. The street surface itself has historically been one of the most important pieces of public infrastructure provided to residents by the state.

Streets also provide spaces for public life, community interaction and economic activities. Shops usually front onto streets and in pleasant weather street vendors and sidewalk sales may use public street space. In recent years sidewalk cafes and street festivals have combined private entrepreneurship and social activity on public streets. Children play games like street hockey and hopscotch on neighbourhood streets, while block associations sometimes close streets to celebrate local events. Streets are indeed multi-functional community spaces.

Planners tend to conceptualize the city in terms of street patterns organizing blocks of land uses and linking origins and destinations. We write about the importance of streets as part of a dynamic and engaging public realm (Duany *et al.* 2000; Sandalack and Nicolai 2002). We appreciate the beauty and functionality of great streets (Handy *et al.* 2003; Jacobs 1993). To a considerable extent, Western planners see streets as key public spaces that structure the form of the city and generate its character.

In the contemporary North American city, however, this traditionally public good—the street—is increasingly planned, designed and governed in the private realm, both in commercial areas and in residential neighbourhoods. Indeed, the distinction between the public and private spheres has become blurred in the post-modern city (Dear and Flusty 1998; Defillipis 1997; Gottdiener 1997).

Fabricated commercial streets like CityWalk in Hollywood and Orlando (Universal Studios 2005), Santana Row in San Jose, or Eau Claire Market in Calgary are privately owned shopping centres posing as lively streets in the public realm (Archer 1997; Banerjee 2001). Meanwhile, neighbouring businesses lease public streets for sidewalk cafes, giving the private sector control over formerly public spaces (Livingston 2005).

A high proportion of new residential developments in the suburbs are on streets or lanes owned in common by residents through a homeowners or condominium association. Some observers have raised concerns about this growing trend. As non-state actors operating on private property, homeowners and condominium associations are not bound by the American Constitution or the Canadian Charter of Rights and Freedoms, are able to set their own rules about behaviour, limit free expression of residents and non-residents alike, and exclude non-resi-

dents through gating or signage (Kohn 2004; McKenzie 1994).

Large networks of private streets also tend to impede connectivity and public access, with important implications for travel choices, mode options, emergency access and quality of life (Handy *et al.* 2003). Unless specifically negotiated with the developer, public access is not guaranteed across private streets even if, for example, a route has historically served as a pedestrian path to access some public amenity like a park or a beach. While most new urbanist-inspired communities explicitly permit public access, in practice up-scale private streets act as psychological barriers preventing comfortable access by certain groups of people. This situation is especially likely when signage identifies streets as private or forbids certain activities such as skateboarding or cycling.

Development policy in some American cities makes it almost impossible to develop new housing on public roads. Las Vegas requires developers to establish community associations to manage streets and vegetation (McKenzie 2005). Struggling financially under government downloading and budget cuts, many cities want to escape the responsibility of providing services to residential districts. Consequently, 80% of housing starts in the US are now in projects governed privately by residential community associations (CAI 2005).

Current estimates suggest that 22 million dwelling units in private communities in the US house close to 55 million people (CAI 2005), or 18.8% of the population. Four million American households occupied access-controlled (gated) communities in the 2000 census (Sanchez *et al.* 2005). Concerns about privacy, security and status (Blakely and Snyder 1997; Low 2003) and the desire of municipal governments to shift development and maintenance costs to buyers combine to make private roads a popular option for new development.

Building with private streets typically allows developers to negotiate standards more appropriate to the aims of their project. In the face of conventional public design standards that require wide streets and large setbacks, new urbanism developments employ private roads as a strategy for building more intimately scaled environments. Paradoxically, while new urbanism promotes public space and civic values, its proponents make extensive use of private roads to achieve their objectives. Streets in new urbanist projects like Seaside and Kentlands appear open and public, but they are privately owned and managed by homeowners associations.

Residential development on private roads is on the rise in Canada as well. Recent data show that 9% of dwelling units are now in condominium or strata developments (CMHC 2004a). Forty per cent of this condominium market is ground-oriented detached, row or mobile housing (CMHC 2004b) where association members own the private streets or lanes that lead from the driveways of individual units to the public streets outside the development. Recent changes to Ontario's Condominium Act may have increased proposals for new pri-

vate streets in that province. Private roads are also extensively used in mobile home parks, land lease developments, military bases, cottage developments, some rural subdivisions, and neo-traditional projects (such as the private rear lanes in Cornell in Markham ON).

Research on gated communities in Canada (Grant 2005; Grant *et al.* 2004) indicates that enclosed developments almost universally use private roads. Moreover, private streets not currently gated are often designed in ways to later facilitate retrofitting with gates. Given the widespread use of private streets we observed in Canadian suburbs in recent years, we wanted to know more about the use of private local roads and the planning response to them.

Our search for literature and data on the extent of development on private roads in Canada revealed little documentation. We could not determine whether municipalities have any concerns about the growth of private roads, nor whether they have developed any policies to address these concerns. We could not find data to indicate the extent of residential development on private roads in Canada, where private roads are common, or even what factors contribute to their use. Accordingly, we distributed a survey to municipal planning departments to build a picture of the situation in Canada.

A survey of practice

In the summer of 2005 we conducted an email survey of Canadian municipal planning departments. We included all communities with 20,000 or more residents (2001 census), and added the largest communities from provinces and territories with few large cities. We identified appropriate contacts in 172 planning offices, including communities from all 10 provinces and three territories. We translated the survey into French to send to communities in Quebec. We sent at least two reminders to communities that failed to respond, and placed follow-up phone calls to some communities identified as high priority because of our previous field visits.

The cover letter explained our interest in local streets (not collectors, arterials or highways) and provided our working definition of a private street as “any roadway in private rather than public ownership used for access to private driveways or parking areas.” Using a combination of six close-ended questions and four open-ended questions, we asked for information on any policies that address private streets, the circumstances under which municipalities currently permit private streets, the design standards for public and private streets, the reasons private streets exist in the municipality, the number of lane-kilometres of private streets, the number of residential units on private streets, and any comments respondents may have about the use of private streets. For the open-ended questions, we developed coding categories during the data analysis phase by looking for common themes in the responses.

We received 68 responses (response rate 40%) to the survey, with coverage from all 10 provinces but none of the territories (see Table 1). The survey was initially sent to planning departments and in most cases (n=57) planning staff responded on behalf of their municipality. Sometimes, however, planners referred the survey to their engineering or traffic department staff (n=11). Some replies involved input from more than one department.

Table 1: Response distribution

Province	Municipalities contacted	Responded to survey
Alberta (AB)	12	5
British Columbia (BC)	28	17
Manitoba (MB)	2	1
New Brunswick (NB)	4	2
Newfoundland and Labrador (NL)	3	1
Nova Scotia (NS)	7	7
Northwest Territories (NT)	1	0
Nunavut Territory (NU)	1	0
Ontario (ON)	72	27
Prince Edward Island (PE)	2	1
Quebec (QC)	35	5
Saskatchewan (SK)	4	2
Yukon Territory (YK)	1	0
Total	172	68

The municipalities that returned responses included a range of sizes and locations: both large and urban, and small and rural. Some respondents indicated that their municipality has extensive private road development, and some said they have no private roads. Thus, although far from complete, the coverage is sufficient to reveal the scope of the issue and the dynamics of the situation.

Seven respondents replied but did not attempt to complete the survey. Some declined to answer saying it would take too much time to collect the data. For instance, Kawartha Lakes ON indicated that they had too many private roads to count. Other planners said that they were short-staffed, they did not readily have the requested information, or that they had no private roads and thus the survey was not relevant to their situation.

Not all respondents answered all questions. Replies were most frequently omitted for questions that asked for data such as street design standards, lane-kilometres of private streets or dwelling units on private streets. Some referred us to their web sites and plan policies for details.

While we did not get complete responses from all respondents, the data provided gives a snapshot of the development of private residential roads in a good sample of Canadian communities. It confirms the importance of these questions about private roads for contemporary planning, and reveals the need for further research. It shows that private streets now make a significant contribution to residential urban form in many Canadian cities and confirms that planners share concerns about the implications of this trend. The next sections document our findings.

The extent of private streets

Respondents from across the country noted that private streets are becoming more popular in their communities. By far the most common factor given to explain the presence of private roads in the surveyed communities was “new private developments,” cited by 43 respondents. Thirty participants noted that private streets were “a historical legacy.” Many municipalities inherited private roads on annexation or amalgamation with their rural hinterlands. Indeed, private roads are common in rural areas and cottage developments, and also on military bases turned over to the public. Nine respondents checked off “special exceptions.” Two mentioned cottage lots and two cited rear lanes or alleys. A planner in Orillia ON pointed to the 2001 changes to Ontario’s *Condominium Act* (1998, SO 1998, c. 19) as a reason for the recent growth of private streets in that province. The new Act permits common element condominiums, where owners of surrounding lands share proportionate interest in common element facilities, such as a golf course or a private road.

To gauge the extent of private road development in Canadian communities, we asked planners to provide estimates of lane-kilometres of private and public local streets. Although many could not offer any figures, 42 gave at least partial estimates. The 32 municipalities that included an estimate for private streets reported a total of 2,057 lane-kilometres, slightly more than half built in the last decade. Some communities with extensive condominium development said they had no private roads; however, they have many kilometres of what they call “private driveways” that would fit our definition of private streets. Of the 32 municipalities that estimated their lane-kilometres of private streets, responses ranged from zero to 573 km (see Table 2): 13 had less than 10 km; 15 had between 10 km and 100 km; four reported more than 100 km. While private streets comprise only a small proportion of total road development in most of the communities, the ratio of private to public roads is as high as 1-to-3 in both Burlington ON and East Hants NS.

Table 2: Kilometres of private and public roads from communities providing complete estimates

Municipality	Lane kilometers of local streets		Percent of local streets that are private	Private street lane kms built in last 10 yrs	Percent of private street lane kms built in last 10 yrs
	Public	Private			
Burlington ON	1747	573	24.7%	243	42%
East Hants NS	9.9	3	23.3%	**	**
Hamilton ON	2361	340	12.6%	**	**
Windsor ON	1300	183	12.3%	**	**
Alma QC	192	26	11.9%	14.32	55%
Fredericton NB	421	50	10.6%	17	34%
Brandon MB	300	30	9.1%	27	90%
Langley BC	5000	500	9.1%	350	70%
Aurora ON	150	13	8.0%	10	77%
Red Deer AB	471	33	6.5%	6	18%
Regina SK	1132	38	3.2%	**	**
Coquitlam BC	1100	34	3.0%	4	12%
Mission BC	350	10	2.8%	7.5	75%
Guelph ON	966	22	2.2%	21	95%
Brantford ON	1000	20	2.0%	10	50%
Toronto ON	3000	60	2.0%	12	20%
Burnaby BC	3200	60	1.8%	40	67%
Stratford ON	112	2	1.8%	1.8	90%
New Westminster BC	300	5	1.6%	5	100%
Brockville ON	220	2.32	1.0%	0	0%
Summerside PE	100	1	1.0%	0	0%
Rocky View AB	2396	20	0.8%	10	50%
Surrey BC	2068	17	0.8%	**	**
Saint-Hyacinthe QC	370	1.8	0.5%	0.3	17%
Chambly QC	130	0.3	0.2%	0.3	100%
Kitchener ON	800	1	0.1%	*	*
North Vancouver BC	300	0	0.0%	0	0%
Prince Albert SK	250	0	0%	0	0%

Notes: * We observed private streets in condominium developments in Kitchener, but the municipality considers them “driveways” and hence did not include them in the estimate. We suspect that several other communities with low estimates in this table have private condominium streets.

** Data not available.

We also requested estimates of the number of dwelling units on private streets. Many communities provided no figures, but 39 offered estimates that totalled just over 67,000 units (see Table 3). Several communities (e.g., Vancouver BC, Guelph ON) indicated that fewer than two percent of their housing units are on private streets. The table reveals a significant component of the housing stock on private streets in some communities. A startling one-quarter of the dwelling units lie on private roads in East Hants NS, Burlington ON and Langley Township BC. These estimates reveal major differences in the pattern of recent urban development across Canadian municipalities.

Perspectives on private streets

We asked respondents for their comments and observations related to private road development in their communities. Some respondents left this question unanswered but from the comments received several themes emerged. The most common theme (found in 13 responses) reflected municipalities' worries about the long-term maintenance of private streets. Respondents feared that in the future residents might ask the municipality to take over roads that are not built to municipal specifications. As a planner at the City of Richmond explained:

“[we have] not allowed private streets because of concerns that the streets and utilities would be undersized, not properly maintained and eventually pressure would be put on the municipality to assume responsibility for these streets and utilities.”

In Regina, Council granted condominium owners a tax rebate to compensate for not receiving municipal garbage services. Other planners reported that private road residents complain about paying both municipal taxes and condominium fees and worried that some might also push for a break on their taxes. A planner in Burlington ON noted that:

“many freehold owners within these [new common element] condominiums are not even aware that their streets are private and are of a mindset that they do not wish to pay condominium fees to maintain their common elements such as the road.”

Three respondents suggested that developers and residents seek character in new development by building on narrower private roads. Both Burlington ON and Ottawa ON look to private rear lanes for residential intensification.

Several planners expressed concern regarding the negative social implications of private streets. Four observed that private streets contribute to exclusion by age, income or family status. For example, a planner in Chilliwack BC suggested:

“Private/strata roads tend to polarize a neighbourhood or community at both ends: seclusion for the ‘financially well-heeled’ and the ‘financially

Table 3: Estimates provided of the number of dwelling units on private streets

Municipality	Dwelling units on private streets	Total dwelling units	Percent on private streets
Cambridge ON*	11000	41400	26.6%
Langley BC	8000	33000	24.2%
Burlington ON	12495	52000	24.0%
Abbotsford BC	7500	44000	17.0%
Chilliwack BC	4000	27280	14.7%
Pickering ON	3463	28261	12.3%
East Hants NS	1007	8400	12.0%
Brantford ON	3000	28000	10.7%
Brandon MB	1000	11000	9.1%
Alma QC	863	10060	8.6%
Red Deer AB	2135	27500	7.8%
Fredericton NB	1350	22000	6.1%
Clarington ON	1500	25560	5.9%
Rocky View AB	800	17500	4.6%
Saint-Eustache QC	693	16617	4.2%
Aurora ON	400	14000	2.9%
Richmond Hill ON	1250	50486	2.5%
Prince George BC	500	21000	2.4%
Windsor ON	1510	70000	2.2%
New Westminster BC	500	26000	1.9%
Brockville ON	162	9893	1.6%
Guelph ON	700	44000	1.6%
Miramichi NB	100	7195	1.4%
Mission BC	150	11000	1.4%
Thunder Bay ON	400	29501	1.4%
Coquitlam BC	500	40000	1.3%
Surrey BC	776	78181	1.0%
St. John's NL	350	37000	0.9%
Stratford ON	77	13000	0.6%
Burnaby BC	350	76000	0.5%
Kitchener ON	30	7400	0.4%
Summerside PE	15	5000	0.3%
Saint-Hyacinthe QC	60	23792	0.3%
Chambly QC	20	8140	0.2%
Vancouver BC	500	236500	0.2%
Sault Ste. Marie ON	0	32822	0.0%
North Vancouver BC	0	19000	0.0%
Richmond BC	0	61301	0.0%
Prince Albert SK	0	13750	0.0%

* Note: Cambridge provided figures for units on what we defined as public streets; they define them as "private driveways".

challenged'. The former is typified by the 'gated adult community developments' and 'golf course residential subdivisions', whereas the latter can be found among the run down, rental townhousing projects – sometimes disparaged as 'ghettos'."

Two respondents reported that many private communities in their municipalities are indeed luxury high-end developments while three argued that, in their experience, private street developments have supported affordable housing. Two said that the private enclaves attract seniors seeking privacy and security.

Three respondents worried about a loss of community and of a shared public realm, suggesting that private streets are less "neighbourly" and can diminish public life and civic thinking. In addition, their inward orientation reduces the social interaction on adjacent public streets, reducing them to conduits for vehicles.

Staff in Chilliwack BC, Burlington ON and Brockville ON noted concerns about reduced connectivity in parts of the city with private streets. Since on-street parking is typically not required on private streets, respondents from Stratford ON, Grimsby ON and Edmonton AB raised concerns about parking capacity issues. Staff from Brockville ON and Edmonton AB also mentioned concerns about poor emergency vehicle access.

Comparing standards: public and private

We asked respondents to indicate the design requirements for both public and private streets in their municipality. Minimum right-of-ways on public streets ranged from 15 m in urban areas to 30 m in rural areas, with most falling in the 15 to 20 m range. Roadway widths ranged from 7 m to 16 m, with most falling in the 8 to 10 m range. Most communities require curbs and sidewalks on at least one side; some do not require those features on cul-de-sacs or short streets.

The standards set for **private** streets are often, but not always, lower. Of the 57 municipalities that responded to this question 47 allowed alternative design standards on private streets. Some communities (e.g., Edmonton AB, Peterborough ON) set no minimum standards for private roads. Some (e.g., Grimsby ON, Summerside PE) explained that municipal standards do not apply on privately owned property. Concepts such as right-of-way apply clearly for public streets, but may not be relevant where land is in private ownership, according to some respondents (e.g., Hamilton ON, Delta BC).

For those that did set standards, the minimum right-of-way for private streets began as low as 6 m. In some cases, the requirement mirrored public standards. Minimum roadway widths for private streets carrying local traffic ranged from 4.5 to 11.5 m with the majority falling in the 6 to 7 m range: narrower than public street standards typically require. Only six communities required private streets to employ sidewalks and 15 required curbs.

The rationales offered for the discrepancies between private and public standards varied. Seven respondents said that private streets could employ alternative designs because they are privately maintained: thus the municipality need not worry about maintenance costs, liability and servicing difficulties associated with substandard roads. Five respondents from BC explained that the BC Strata Properties Act does not allow municipalities to enforce design standards on private roads. Six suggested that since private streets are individually evaluated through development agreements, more detailed context-sensitive consideration could be given to design. Another five said that private streets accommodated local traffic only and four noted the absence of on-street parking requirements. Four wanted to accommodate developers' design aspirations. Three indicated that as the municipality was still typically responsible for emergency services, the Fire Code formed the basis for the minimum private street standards. One mentioned the desire to reduce the amount of impermeable surface area through narrower private streets and another said that minimum private street standards helped avoid placing utilities in joint trenches.

Several municipalities reported that they have either recently revised or are in the process of revising their street standards. In 2003 the City of Coquitlam BC updated its requirements for public streets in order to accommodate street trees and boulevards while simultaneously increasing construction and servicing standards for private streets. Toronto ON and East Hants NS are revising their standards in part to encourage the design of public streets that can compete with the attractive design features of private streets. As the respondent from Coquitlam explained: "the intent [of these changes] was to narrow the gap between private and public roads." Demand for private roads may thus encourage some municipalities to adopt revised standards for context-sensitive public street design.

The policy response

We asked respondents if their municipalities had policies or by-laws for private roads. Among those answering the question, 25 said they had formal policies, 24 had informal policies, and 12 had no policies. Many of those who initially said they had no policy later described criteria that staff use in order to determine when to permit private roads (a kind of informal policy). The policies mentioned included elements like provisions for naming private streets (e.g., Ottawa ON, Pictou NS), or by-laws or council resolutions placing temporary or partial moratoria on private streets (e.g., St John's NL). Planners often referred us to zoning by-laws and subdivision regulations.

The reason most consistently cited in response to the inquiry about the circumstances under which the municipalities allow private streets was bare land condominium development (37 responses). Small numbers of respondents (three or fewer each) offered other circumstances: the configuration of land in their

area (especially steep terrain) forces municipal authorities to consider alternative road alignments that are not possible with public roads; requests from developers; cottage development; manufactured or mobile homes; reduced costs for buyers; reduced cost to the city; facilitating development with rear lanes. Thus the factors explaining the need to permit private streets were the forces driving demand for private roads.

Fewer respondents answered the question about the factors leading to policy development. The principal reason given for the need for policy on private streets included a desire to clarify standards and expectations for road quality (six responses). A few respondents offered other suggestions such as: protecting the municipality from liability or requests to take over roads; saving the municipality from maintenance costs; and responding to complaints from residents or requests from developers.

Some planners indicated that they discourage private roads through staff persuasion. In other cases policies do not permit private roads. St John's NL and Kitchener ON, for example, have both placed a moratorium on planned unit developments and new private streets. The City of North Vancouver BC has taken over the private roads in the municipality so that all streets are now public.

Several municipalities have taken efforts to limit residential development on private roads. For example, East Hants NS does not permit private roads in growth management areas, Colchester County NS limits them to subdivisions beyond the reach of municipal sewers, and Cape Breton Regional Municipality NS restricts them to areas beyond "reasonable commuting distance to one of the urban centres." Halifax Regional Municipality NS only allows them by development agreement, within condominium projects or in remote areas.

Some Nova Scotia communities have found it necessary to develop mechanisms to cover the costs of private road maintenance when private streets are used outside of condominium projects. East Hants is facilitating the organization of private road associations and Lunenburg has levied special lot assessments to cover the costs of maintaining private roads.

Respondents from Richmond BC and Summerside PE said they do not permit private streets. In part, however, their claim is definitional. Some communities do not consider the access ways within condominium developments, common in new residential areas, to be "streets" (see Figure 1). Although the definition we provided in the survey asked respondents to consider such access ways as private streets, the municipalities that categorize them as "driveways" keep no formal data. A respondent from Cambridge ON explained: "We do not consider them streets but driveways and these are for the most part regulated by the requirements of the zoning by-law or Fire Code related requirements." The respondent from Prince Albert SK said: "Private roads are not allowed. On-site roads that exist within a Condominium site or such are not considered as a road or street."

Such definitional discrepancies between jurisdictions complicate the task of collecting accurate data on the extent of private road development in Canada.

Figure 1. Is this access route in Kitchener ON a private street or a driveway?



What makes a street?

Respondents offered differing opinions as to whether the private access networks within condominium developments are streets or merely private driveways. In examining the responses and policies provided we see that in practice planners and municipal employees take different approaches to deciding what makes a space a street. The municipalities of New Westminster BC, Richmond BC, Prince Albert SK, London ON, Kitchener ON and Cambridge ON, for instance, share the view that roads entirely on private property to serve the residential units on that property and with little potential to carry non-local traffic should be treated not as “private roads” but as access driveways to multi-family units. By contrast, other municipalities call the same kind of routes private streets.

Our findings suggest that four factors may play a role in determining whether authorities treat an access route as a private street / private road or as a driveway: name, ownership, access and function.

The development of policies and bylaws about street naming in communities like Guelph ON, Ottawa ON and Pictou NS draws attention to the semiotics of these spaces. Endowing a space with a name conveys a significance on it. As a planner from Cambridge ON explained, they permit private streets “only as part of multiple family projects, but we do not consider them as streets and they are not named unless [under] special circumstances.” Mission BC calls them strata roads and Vancouver BC calls them privately owned mews.

In part, then, some access ways cannot be real streets without names. In many condominium developments, the roadways are unnamed. All units take their street address from the number assigned to the entry of the development from a public street: thus, for instance, all the homes may be units of #454 Peach Lane. If signs designate an access route as “private” without giving it a name, then some municipalities call it a driveway. Some municipalities regulate the process of giving names to private streets: endowing a name on a paved surface changes it to a “street”. When cities do give private roads names, they often mark the street sign blade with the letters “PRV” or “PRIV”, or use a different background colour, to underscore the private character of the route.

These rules about street naming may be particularly western. In Japanese cities minor residential streets rarely have names (Shelton 1999). American efforts to name streets during the post-war occupation produced no lasting results. For the Japanese, minor public roads need no names. Instead, neighbourhoods are named and homes numbered within the neighbourhood. The Japanese do not expect unfamiliar visitors and hence feel no need to facilitate access to the private realm by devices such as naming streets. While westerners navigate by road signs and patterns, the Japanese rely on landmarks, experience, and maps that indicate the names of property owners.

Kohn (2004) argues that issues of ownership and access complicate questions of public and private in the built environment. Ownership and accessibility influence our thinking about what makes a street versus a driveway. Some municipal staff members hold that a street should, by its very nature, be publicly owned and an important part of the public realm. Hence any route used for travel on private property would, by definition, be a driveway. Others may suggest that public access is the key. Routes could be privately owned but available for common use by some set of users. If some level of public access is possible, then the space is a street (though privately owned). Private streets may be a kind of liminal space: neither fully public (owned by the government and accessible) nor fully private (owned by individuals and off-bounds). The spaces we call private streets are shared “public” space for a limited club of users (Webster 2002).

The final factor that determines whether a space is a street reflects its functions. Spaces we call streets have particular purposes in the urban environment. They provide access from the residential environment to places of work, commerce,

education and recreation. If a space fulfills these functions, many would argue that we should designate it a street. The functional approach is a reasonable perspective for urban planners to take. If a space looks like a street and people use it as they use a street, then whether the space is named, is privately owned, or is accessible to only a subset of the population, it is a street.

What kind of streets do we want?

Given the importance of quality information to good decision-making in planning, the difficulty of discovering data on private streets surprised us. Some communities have developed good data sets linked to geographic information systems, but others have limited abilities to analyse the spatial patterns of private streets, or even to estimate roughly the extent of private road development. While this situation may improve as more communities develop their data collection and GIS capabilities, researchers interested in understanding the extent and nature of private streets cannot at present rely on municipalities to provide the information they need.

Our survey provides sufficient evidence to suggest that private road development is significant in Canada. Some communities have large numbers of dwelling units on private streets; many new residential areas are being built and managed in the private realm. Although we lack sufficient data to determine accurately where development on private roads is occurring most frequently, private roads seem to appear most commonly in areas that are growing quickly. In those locations private roads provide a way to reduce development costs by achieving density while offering residents added privacy (and perhaps exclusivity). Case studies of practice may help to build greater understanding of the extent and implications of the phenomenon, and the motivations of those who build and inhabit them.

The survey indicated that municipal authorities share concerns about the implications of private streets. Many are working to develop policy. Some municipalities may not have the tools to effectively regulate roads on private property, especially for condominium projects. Torn between a desire to encourage higher density development, and professional convictions that a quality public realm is a hallmark of the good city, planners struggle with how to manage private communities. As several respondents noted, the popularity of condominium development as a tenure type contributes to the rise of private streets and is having a major impact on new residential community form.

With a growing number of kilometres of private roads, ever larger sections of our cities can be rendered off limits to cars, cyclists and pedestrians. Vast areas of private streets may interrupt transportation mobility and urban connectivity. They may exacerbate social trends that promote class segregation and social exclusivity. These results contrast with contemporary planning principles that ad-

vocate connectivity, integration and diversity. If we hope to avoid potential fragmentation of the urban landscape then we urgently need further research into the spatial and socio-economic implications of development on private roads.

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