Not this way!! Exploring the implications of access restrictions in public streets

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INTRODUCTION

Planners across North America recognize that spatial connectivity is an important consideration in the successful development of urban areas. Well connected, vibrant cities also encourage the cultural and economic well-being of their inhabitants. Certain urban forms and planning tools openly challenge ideals of integration; in certain cases they may even fragment society based on income, class or ethnic background. Gated communities, for instance, are increasingly fragmenting the urban landscape by offering seclusion to those in search of privacy and exclusivity.

Access restrictions, however, happen not only on private roads. Certain neighbourhoods have closed access on public streets, thus preventing outsiders from entering or shortcutting through. Very little is known about restricted access public streets in Canada, the permit process and legislative approach to street closures, and the consequences for traffic patterns and emergency vehicle access.

RESEARCH QUESTION

The purpose of this study is to identify the number and location of public streets with restricted access in the Halifax Regional Municipality (HRM) of Nova Scotia, Canada. By exploring the location and the reasons behind the creation of these closures, I will attempt to answer the following question: *why do some neighbourhoods barricade their streets in Halifax, and what are some of the potential implications of these closures?*

In order to understand the issues behind the closures, I will first look at the existing literature. I developed a methodology which helped me in the documenting of

all the streets identified for the study. Based on the findings, I will discuss some of the implications of access restrictions, especially for emergency vehicle response, and I will conclude by making some recommendations that may help planners address traffic issues without jeopardizing safety and the enjoyment of public spaces.

BACKGROUND

The issue of street design has always accompanied the development of urban spaces. Throughout history, roads and pathways have united people, increasing their social, economical and political interactions. Many of the street patterns we use in our cities and neighbourhoods today made their appearance centuries ago in the urban centres of several different cultures. The grid, for instance, can be traced back to 2500-1500 BC, and cul-de-sacs are found in the residential districts of great, ancient cities like Eridu, Ur and Uruk (Grant, 2001). From the Americas to China, the grid has symbolized power over nature and the ability to establish order in the built environment. Cities in North America were built under these ideals of order and control, and the grid became the standard planning tool for urban design. North American planners have long considered the grid appealing and functional; appealing in terms of its pure form and geometrical design, and functional for its simplification of surveying, transportation and land development (Handy et al. 2003). Others however, consider gridiron designs monotonous and unappealing.

As populations grew, the sanitary conditions of cities and towns often deteriorated, and health problems spread rapidly. One of the most popular solutions was the regulation of street width and direction. Commissions were set up in European and

North American cities in order to plan and carry out the redevelopment of streets. The elites developed a different solution to the overcrowded conditions and monotonous urban patterns of the city: they retreated to the urban edge. The new suburban developments sought to separate themselves from the dirt and moral degeneration associated with the city. Suburbs also exercised a segregation of class and land uses, with a particular focus on the concept of the nuclear family (Southworth and Ben-Joseph, 2003).

The emergence of the suburb also promoted the adoption of different street patterns and designs. One of the pioneers of suburban street design was John Nash, who in 1823 designed the plans for Park Village East near London, England. Nash's design differed from rectilinear street designs, and adopted winding streets with sidewalks and houses of different styles, all this within a picturesque setting. In North America, one of the prototypes for suburban street patterns was the Hampstead Garden Suburb, designed by Raymond Unwin and Barry Parker in 1904. Here the streets followed the natural contours of the land; they were also narrower in order to discourage outside traffic, and cul-de-sacs became widely used to facilitate pedestrian activity (Handy et al. 2003).

As automobile use increased, streets became more and more the realm of the machine and less a space for pedestrian activity. The influence of the automobile in the urban environment moved people like Clarence Stein to create a hierarchy of streets. Residential subdivisions inspired by the ideas of Stein divided street uses according to width. Residential streets, for instance, became narrower than arterial streets. These concepts of street hierarchy are still part of the street classification system used to this day in most of North America. In other words, streets continue to be divided according

to the way in which they serve access or movement functions (Handy et al. 2003). This hierarchy now so prevalent in urban design is very rigid, and also based on very few types.

The cul-de-sac is still widely used and recognized as an efficient way of discouraging through traffic. It is then also possible that the limited street designs for residential neighbourhoods continue to perpetuate street forms like the cul-de-sac even within urban neighbourhoods. The closure of public streets in urban neighbourhods may emulate suburban street patterns because of the rigid and unimaginative way in which we continue to encourage pedestrian activity.

Very little has been written in terms of restricted access public streets in Canada. Most of the literature that explores this issue refers to examples in the United States and Britain. Sources are predominantly divided between those which advocate access restriction, and the ones that argue against it.

One of the most widely recognized advocates of street closures and access restrictions is Oscar Newman. In 1972 Newman introduced the concept of "defensible space," a design-intensive exercise aimed to revitalize run-down inner city areas in American cities. Defensible space is a model which seeks to inhibit crime by strengthening social interaction and surveillance within a neighbourhood. Newman believes that crime and social disintegration tend to concentrate in public areas that residents do not consider their own. People tend to identify with and protect areas they consider theirs, regardless of whether they own or rent. Residents will jealously protect an environment which they feel part of. Street closures thus seek to privatize the public realm. The results are twofold: outsiders are easily identified when through access is

severed and restricted only to local residents; moreover, neighbours exercise greater maintenance and control over areas clearly demarcated as their own (Newman, 1995). The effectiveness of defensible space concepts were first observed in three projects in the United States: two of these were in inner-city neighbourhoods of Dayton, Ohio, and the south Bronx in New York. The third one integrated public housing residents into a middle class neighbourhood of Yonkers, New York.

Newman's defensible space approach has been considered highly successful in deterring crime and enhancing social interaction among neighbours. This success made the concept of Crime Prevention through Environmental Design (CPTED) highly popular (Landman, 2003), and sparked the interest of several politicians and planners across North America and Europe. London, England, for instance, is now one of the most active pursuers of safety through street closures and defensible space principles. Peter Knowles, Bedfordshire's police architectural liaison officer is a strong advocator of defensible space. He states that street closures provide residents with a greater degree of control and ownership of "their" road (Knowles, 2001). These closures, he adds, are necessary not only on main roads, but also in walk paths and minor roads. This means that not even pedestrians or cyclists are exempt from access restricting measures. It is interesting to note how in terms of crime deterrence, good connections and accessibility are a nuisance rather than a goal, and the rightful enjoyment of open spaces by all becomes a questionable privilege.

In 2004 the office of the Deputy Prime Minister of Britain released an information and education book called "Safer Places: the Planning System and Crime Prevention." The purpose of this book is to serve both the public and civil servants as a tool for the

creation of safer communities; "alley gating" is among the measures considered most effective by this initiative. It is obvious once again that open access is not a desirable feature; moreover, the hierarchy of streets according to intensity of use is very rigid. There are differing views regarding density and safety in public streets, some groups encourage usage and high volumes of traffic in order to keep all streets safe. Many of the measures suggested by the book, however, seek to restrict access in poorly used roads and redirect users towards busy arteries. Measures that would increase use/activities in unsafe streets are seldom considered and closure, the most drastic solution, becomes the predominant one.

It is difficult to find literature that supports street closures outside of the context of defensible space. William Smith-Bowers and Toni Manzi are among the few authors who defend street closures based on other issues. Both university professors claim that much like private gated developments, public alley gating suffers from criticism based on a number of assumptions that lack empirical evidence (2004a and b). For instance, the privatization of neighbourhoods, rather than promoting alienation and the disintegration of the social urban fabric, is allowing residents to reclaim areas in decay. Moreover, they argue, enclosure enables middle class families to remain in inner city areas they would otherwise leave. Smith-Bowers and Manzi's arguments in favour of alley gating and private gated communities are still highly reliant on the issue of safety and crime deterrence. However, they are right in stating that many claims against these features lack empirical evidence. With their words in mind, I will attempt to base my conclusions and recommendations in the empirical foundations of actual evidence, rather than in "ideological predispositions."

Blakely and Snyder (1997) have become recent authorities in the issue of access closure. In discussing closures on public streets, they talk about some of the reasons that may prompt neighbours to exercise this form of territorial control in the public realm. Public and private street closures, they argue, attempt to simulate suburban street patterns created to deter outsiders, whether these are casual visitors or criminals (Blakely and Snyder, 1997). In their typology of gated communities, Blakely and Snyder speak of Security Zone Communities, areas where the fear of crime and those who may perpetrate it are the primary motives for seclusion. "Barricaded perches," according to the authors, are the fastest growing type of security zones. These perches occur at all income levels and in all parts of the city, they are responses either to a direct or perceived threat. They also seek to strengthen social values and enhance the livability and enjoyment of their environments. This enclosure, however, is a clear example of the "fortress mentality" that encourages people join together to seclude themselves. Barricades here are directly associated with fear and the desire to protect family and property values. Blakely and Snyder also acknowledge the use of barricades as traffic-calming measures, but believe that in many instances, such claims are only excuses to exercise seclusion.

Many of the examples of barricaded perches offered by Blakely and Snyder brought about the eventual privatization of open spaces. Mike Davis (1990) has warned since the 1980s about the criminalization of the poor and the growing restriction on the rightful access to public spaces in the United States. The barricades that divide the streets of Miami Shores from the city of Miami, in Florida, separate two neighbourhoods by income, ethnicity and by the quality of their amenities. The working class, black residents of Miami were considered a danger to the safety and aesthetics of the more

affluent Miami Shores. Blakely and Snyder believe it is unclear whether barricades actually work in deterring crime. The reduction of certain types of crime cannot be directly attributed to the role of barricades (Blakely and Snyder, 1997). What is certain is the desire by residents to take control of their neighbourhood, whether by reasons of convenience, fear, or desire for exclusivity.

Another voice against the privatization of public neighbourhoods is that of Dell Champlin (1998). He believes that as neighbourhoods become more insular, individuals may become less concerned with socio-economic problems present in the wider metropolitan area. This example of NIMBYism can eventually create less involvement at the city level. The benefits in terms of increased social capital at the neighbourhood level can become outweighed by detachment at a greater scale.

Karina Landman is another voice against alley gating and access restrictions on public roads. She argues that these closures encourage social division, and more importantly, that they have a cumulative impact at the city-wide level that is often overlooked. Closures displace traffic to a limited number of access routes, and therefore increase overall congestion and travel time. Moreover, barricades increase the coarseness of the urban grain, creating "super blocks" that make urban management and maintenance increasingly difficult. The consequences of street closures are felt outside of the neighbourhood in which they occur, and slowly but certainly, these closures are also changing the nature and layout of contemporary cities (Landman, 2003).

Beaty Naude (2004) criticizes public street closures because of their limited success in reducing crime rates. Barricades and alley gating, she argues, can reduce opportunistic and impulsive crimes, but they have little or no impact on the crime rate at

the city, regional or national level. Naude also recognizes the impact that public closures may have on emergency response timing. She states that the desire for increased safety may actually cost someone his/her life due to inefficient emergency response access. Barricades may also have an economic impact on businesses located in areas where the flow of people is reduced by a closure. Finally, there is also the potential for conflicts among neighbours. If a homeowner does not support a public road closure, he/she may be pressured by those who want it implemented.

There is also a relevant body of literature that offers alternative forms of traffic calming measures. Southworth and Ben-Joseph (2003), for instance, describe a Unified Street principle which gives priority to pedestrian uses rather than vehicular traffic in public streets. Michael Poulton (1982) proposes that a similar concept, the Dutch "woonerf," be introduced in North America. David Engwicht (2003) talks about reclaiming public streets through a change in pedestrian attitude rather than by the use of traffic tools or barriers. Susan Handy and colleagues (2003) build a case for increasing arterial connectivity as a tool to reduce neighbourhood through traffic. I will come back to these alternatives to street closures, and discuss them in greater detail.

The literature review shows the small number of sources that extensively deal with access restrictions in public streets. The topic is usually explored as a variation within the wider research framework of gated communities and access in private roads. The reality is that public street closures raise some important questions in terms of access in a realm that, unlike private roads, is not meant to be exclusive.

The fact that the literature has been developed in the specific context of the United States and Britain may present some problems when used to frame the Canadian

example, and more specifically, a mid-size Canadian city like Halifax, instead of a larger metropolis. For instance, many barricades and alley gating tend to occur as a response to crime or the fear of crime, especially in cities like New York, Los Angeles, Miami and London. The creation of the defensible space concept, moreover, was created to allow residents to take back control of neighbourhoods that had been lost to high crime rates and other social pathologies (Newman, 1995).

Another issue is the insufficient attention the literature gives to restricted access in public streets merely as a traffic-calming measure. Authors often neglect to consider barricades as tools which address particular traffic nuisances such as shortcutting, speeding and parking. In cities where crime is not a serious cause for alarm, street closures are most likely related to traffic issues. The fact that street patterns have to be modified in order to increase safety suggests that there is a design problem that planners need to address. There is a need for research on current street patterns not foreseeing/meeting the demands of contemporary living, especially in terms of traffic safety.

Finally, much of the literature deals with the consequences of privatizing the public realm, especially in terms of equal access to amenities. Peter Knowles (2001) states that alley gating creates "selectively public" or semi-private spaces. He considers the loss of general access and the selective denial of enjoyment of public spaces necessary measures for safety. But when fear of crime is not an important consideration, is the restriction justified? This suggests that in cases when street closures obstruct the enjoyment of public spaces, they can only be justified by a serious threat to public safety.

Given the lack of Canadian literature on this issue of public street closures, I will attempt to appraise the local usefulness of some of the key issues highlighted by the previous authors.

METHODOLOGY

I have set out to identify and document all the barricades in the Halifax Regional Municipality (HRM). My goal is to discover any patterns or issues that may help me understand why certain neighbourhoods barricade public streets, and identify some of the consequences of these closures. With the word *barricade* I refer to physical barriers that restrict total or partial access through a public street. The HRM planning offices do not possess a comprehensive list or inventory of public streets with restricted access. However, I was able to obtain a list of most of these streets, thanks to the efforts of the planners and engineers with whom I have been in contact.

Figure 1 shows the list of barricades and their location, as received from the planners. The following step was to map the location of these streets; figure 2 thus shows where the barricades are situated, as well as the location of schools and emergency response institutions. A more complete map with legend is provided in the appendix section. Given the extensive number of elementary, junior and senior high schools, I only show those in relative proximity to the streets in question. As far as emergency response institutions (hospitals, fire and police stations), I have shown them all, to the best of my knowledge. I included these features because schools may play a significant role in deciding if a barricade is necessary. I mapped emergency response institutions in order to understand issues of timing and alternative routes.

Figure 1: List of street closures provided by the HRM

List of Barricades	Reason	When
1. William Hunt at Edward Arab (A)	Cut to stop significant shortcutting	Done about 20 years ago
2. Yukon at Monstery (A)	Cut due to anticipated traffic from the mall when it was first proposed	
3. Yale at Monastery (A)	Cut due to anticipated traffic from the mall when it was first proposed	
4. Briarwood at Bayview (B)	Cut when signals were to be installed at Bayview/Lacewood	
5. Armada between Bedford Highway and Skylark (B)	Because the road was collapsing. It is also very narrow. Has been stabilized but not re-opened.	
6. Dartmouth Rd at Devonshire/Roome (A)	When Devonshire arena was built	
7. Ida at Herring Cove (B)	Grading problem	Very old
8. Mayor at Old Sambro (B)	Due to shortcutting from a Tim Horton's which is now closed	
9. Gerrish at Brunswick (A)	Closed to reduce trafic volumes on Maitland after the death of a five year old child, killed while on his way to school	Early 80's
10. Gerrish at Barrington (A)	Done for safety when Barrington was widened	
11. Carver at Portland (B)	Partial closure when new Superstore opened	
12. Lakecrest/Helene/Main (B)	Drivers were using Lakecrest at high speeds to avoid traffic signals on Main at Hartlen	
13. Farquharson at Main (B)	When Caledonia at Main was widened	
14. Old Sackville Rd between Melham and Ridge (B)	Due to land exchange from the alignment of what is now Highway 101. This was done by the provincial government	
15. Alpine at Portland (B)	Upgraded from cul-de-sac to right turns only because of the nearby traffic signal installed at Regal/Portland and the new connection at the other end of Alpine	
16. Penhorn St. at Staple Centre driveway (B)	Partial closure due to fears that the proposed Chrysler dealership would send much traffic through Penhorn	
17. Islandview between Bedford Highway and Shore (B)	Deemed dangerous due to the railway grade crossing. It is supposed to be accessible by fire trucks	

I was able to visit all the streets on my list, with the exception of number 16: Penhorn Street in Dartmouth. After several failed attempts to locate it, and given the limited time available, I was forced to abandon my efforts. I successfully found and documented all other streets; appendix 2 shows the form I created to record materials, design and other important descriptive elements. Finally, I compiled all the gathered information into a spreadsheet (appendix 3).

Figure 2: Map showing barricades, schools and emergency response institutions

At the same time I was conducting the site visits, I approached emergency response institutions. My idea was to obtain additional information about the possible implications of barricades on emergency response access and timing. I used 'interview form B' (appendix 4) to gather the information obtained during the face-to-face interviews. Ethical considerations prompted me to only request information based on professional expertise. I refrained from asking personal questions, even names; I also explained interviewees that responses would be kept confidential. Fire response

personnel were the most cooperative, and therefore most of my data is based on their responses. I made several attempts to contact police and paramedic personnel, but due to their busy schedules, I obtained very few responses, especially from paramedics.

The final step in my data gathering process consists of interviews with HRM planners and engineers. Appendix 5 is an example of the form I sent via email to professionals in the planning office of the HRM. I did this very early in the process, and luckily so, because their responses took the longest. Despite all efforts, I only obtained a total of two responses to "interview form A".

FINDINGS

All of the barricades visited, with the exception of one, protect residential streets. These residential streets in turn, all connect to busy roads (arterial, highway or collector) and to other low traffic residential streets. Eight of the streets where barricades are located have single unit dwellings as the only type of housing, many others also show it, but mixed with apartment buildings or townhomes. From these observations, it is easy to conclude that street closures usually respond to the needs, expectations or demands of families seeking privacy, comfort and silence.

Yale Street

Edward Arab Street

Bedford Highway

Bayview Street

From the map we can also observe that most of the barricades (10 of them to be exact) are near schools, within a 500m radius. Schools may not have been the most important consideration in all of the cases, but could have served as yet another reason to request a street closure. In some cases, the school is the main reason for this drastic type of traffic calming measure. Gerrish Street, for instance, was closed at Brunswick Street after the death of a five year old boy who was killed by a speeding car while on his way to school. In cases like this, it is hard for authorities to oppose a request for street closure.

It is important to notice that only six of the barricades are located in peninsular Halifax; the rest are in suburban areas. Blakely and Snyder (1997) suggest that many street closures are created in an attempt to emulate suburban street patterns within inner city areas. In Halifax, most of the closures on public streets happen within the organic pattern of suburban streets. Moreover, and based on site visits, I found no indication that suburban barricades divide areas by income or ethnicity. They mainly exist in isolation, responding to very specific local issues. In places like Miami Shores, where barricades seek social containment, they occur in close proximity to one another, and along clearly delineated neighbourhood boundaries (Blakely and Snyder, 1997). However, further research is necessary to solidify my observations in the Halifax area.

While creating the map showing the location of barricades, I thought about including parks and open spaces located near the street closures. My idea was to do this in light of what Davis (1990), Blakely and Snyder (1997), and Champlin (1998) suggest: that some forms of access restriction, and the privatization of certain neighbourhoods deny some groups from the rightful enjoyment of public spaces. After visiting the barricades, it became apparent that these are not designed to prevent the use of amenities, but are mainly created as a response to a traffic hazard or nuisance. In other words, the reasons for the majority of these closures relate directly to the automobile. Sometimes an amenity creates high traffic flow in residential streets, and the roads are closed to prevent the nuisance. This is not the same as denying enjoyment of the amenity, which often is a shopping mall or recreational centre. I found no indication that any of the barricades were erected to restrict access to open, public spaces.

The design of barricades is a very interesting issue. Some are ornamental and follow a common design pattern. They seem designed to blend with the neighbourhood by using the same materials as the surrounding houses, fences and streets; these materials are concrete, brick and wrought iron. The barricades cover the entire pavement width, but still allow pedestrian/bicycle traffic along the sidewalk; some are open in the middle to become less obstructive for pedestrians.

Briarwood at Bayview

Gerrish at Brunswick

Yukon at Monastery

Other barricades follow a simpler design and use less durable materials such as wood. They usually consist of short wooden poles joined by an iron divider, the kind we usually see on the shoulders along highways. A set of barricades on Islandview Drive in Bedford, consist only of removable concrete blocks covered in graffiti. Despite their simplicity, these barricades are as effective in restricting vehicle access as their more elaborate counterparts. I originally believed that the reason for differences in design and materials is location. I thought that the most attractive barricades were erected near, or in the intersection with more frequented streets such as Monastery Road, Lacewood Drive and Brunswick Street. However, the concrete blocks that barricade Islandview are right on the Bedford Highway. Moreover, both design types are equally distributed between urban and suburban areas. Time restrictions impede me from further exploring this issue, but it would be interesting to discover why both types of design are used.

William Hunt Street

Dartmouth Road

Farquharson Street

Another important observation is that not all the street closures provided in the list involve barricades. Farquharson Street in Dartmouth was turned into a cul-de-sac, but access by pedestrians, cyclists and the disabled is still possible through a small passageway. Some streets have had vehicular flow reduced to a one-way direction while others deny left turns to, or entrance from, a busy road. This is accomplished by widening the shoulder on one side of the street and leaving the street only wide enough for one vehicle to navigate through. These variations of restricted access in public streets may seem better at first, especially because they still allow normal access to pedestrians, cyclists and others. However, wide lips sever a road just like a barricade, especially for emergency response vehicles, which are left unable to pass through the narrow access, and thus forced to navigate around.

Lakecrest Dr.

Carver St.

Alpine St.

Even though most closures still allow access to pedestrians and cyclists, there are others which, either by careless design or intentional restriction make it difficult for non-vehicular traffic to navigate through. The closure of Ida Street at Herring Cove Road allows pedestrian access through a stairwell, but bicycles, strollers and wheelchairs are left with no option but to navigate around using the adjacent streets. Another example of careless design is the closure on Mayor at Old Sambro.

Ida Street at Herring Cove

Mayor Rd. at Old Sambro

There is a closure where total access restriction is emphasized by a set of three barricades at different levels of the street. These barricades are on Armada Street at Bedford Highway. I was told that the road was at one point collapsing due to its steepness and the natural elements; this street is also too narrow and it has no sidewalks. In cases where there are visible hazards, it makes perfect sense to close access to all vehicles and pedestrians. This example raises the question of whether some streets should exist at all. Are the development guidelines we create for streets too lenient? This closure is the only case I found in which total access restriction is adequately justified.

Armada Street at Bedford Highway

In terms of reasons for closure, many barricades were erected to deter a particular nuisance. In most of the cases this nuisance is shortcutting. Some barricades are a direct response to a perceived danger, such as speeding near an elementary school, grading problems and unstable roads, and dangerous crossings. Other closures are done for arbitrary reasons or in response to density increases. One closure done by the Province of Nova Scotia's Department of Transportation and Public Works severed a road by transferring soil from the alignment of nearby highway 101. There is no other reason on record, and the closure supersedes municipal jurisdiction. HRM planners state that some neighbours have complained about this closure because it seems unnecessary. There is also a partial closure on Alpine Drive that is in fact an access upgrade from a cul-de-sac. Because of neighbours' request, and new development in the area, the street was opened for turning into Portland Street, but turns into Alpine from the busy arterial were restricted in order to avoid shortcutting. These types of upgrades do not happen often, and are done by request of the residents/developers.

Figure 3 shows the cross tabulation analysis I conducted to confirm some of the findings. It also shows some significant differences in the characteristics of urban and suburban closures. For instance, all barricades that unintentionally restrict access to bicycles, seniors and the mobility disabled are located in suburban areas. Similarly,

partial restrictions such as sidewalk extensions only happen in suburban neighbourhoods. Other differences include the high versus low density of barricaded streets in urban and suburban neighbourhoods respectively. In terms of reasons for closure, engineering issues and enforcement of traffic regulations only seem to happen in suburban streets; all other reasons spread uniformly across both neighbourhood types.

Findings from the questionnaires sent to planners, and from interviews with emergency response personnel are incorporated in the following discussion.

Figure 3: Inventory findings – cross tabulation analysis

Location of barricades			
Urban* (A)	6		
Suburban* (B)	11		
* For the purpose of this study "urban" refers to the Halifax peninsula and Dartmouth's waterfront while "suburban" refers to the suburbs identified by HRM (Sackville, Bedford, etc)			
Access restriction			
vehicles only		**(A)**	**(B)**
bicycles/scooters	11	**6**	**5**
all access	4	**0**	**4**
	1		**1**
Materials			
iron/wood (simple design)			
concrete/wrought iron/brick (elaborate design)	5	**3**	**2**
sidewalk extension	6	**3**	**3**
concrete boulders	3		**3**
	1		**1**
Types of homes			
single unit			
apartment bld.	13	**4**	**9**
townhomes	6	**4**	**2**
	3	**3**	
Reasons for closure			
to avoid/prevent shortcutting			
danger/hazard	8	**4**	**4**
engineering issue/enforcement of traffic regulation	4	**2**	**2**
	5	**0**	**5**

DISCUSSION

Nova Scotia and the Halifax Regional Municipality do not have high crime rates compared to the national average (see appendix 6)[1]. Nova Scotia has the sixth lowest crime rate per province/territory, the rate itself is slightly below the national average. In property crime rates, the Halifax Census Metropolitan Area (CMA) scored slightly above the median, but experienced a decreased of 6.7% since 1999. The reality is that the fear of crime in Canada has decreased to the low levels of the 1960s and 1970s, while violent crime has steadily diminished since 1990 (appendix 6)[2]. Canadians, especially outside of the large urban centres like Toronto, Montreal and Vancouver lack the fear of crime that characterizes residents of countries like the United States and Britain. Barricades in Halifax are neither a response to the threat of crime, nor an effort to reclaim a neighbourhood from unwanted social pathologies. Street closures respond to traffic nuisances, with speeding, shortcutting, high traffic volumes and noise being the most common ones. This means that defensible space concepts are not a significant consideration when barricades are erected in the HRM. Barricades do not seek to deter crime from a neighbourhood, only to limit motorists.

I found no indication that barricades prevent non-local residents from accessing public and open spaces. If anything, the opposite is most likely: that barricades seek to prevent traffic related to nearby amenities from shortcutting or speeding through residential streets. One of the barricades I visited is accompanied by a sign warning

[1] This is based on 2000 statistical information provided by the Canadian Centre for Justice Statistics: http://prod.library.utoronto.ca:8090/datalib/codebooks/cstdli/justice/2001/2000_crime_e.pdf Accessed 11/08/04.

[2] According to the Department of Justice Canada, indicators show that the country's fear of crime was 25% in 2002, compared to 34% in 1990 and 37% in 1991. Similarly, violent crime rates have decreased during the same period.

outsiders about a neighbourhood watch program. The sign intrigued me, and made me decide to linger in this neighbourhood longer than in others. I never felt uncomfortable or unwelcome even though I was obviously an outsider of colour. However, my research is limited and insufficient at this time to prove whether barricades emphasize certain forms of social or ethnic discrimination. More research is necessary in order to explore this issue in depth.

It is also unlikely that restricted access public streets are a symbol of exclusivity for the neighbourhoods in which they exist. Barricades in the HRM often happen in isolation from one another and do not surround one neighbourhood, or marginalize another. Yukon and Yale are streets where barricades are quite near one another, but both were created to avoid the same nuisance: shortcutting to the near Quinpool mall.

Unfortunately, some street closures unintentionally restrict access to the mobility disabled. Certain barricades limit access to wheelchairs, motorized senior scooters, strollers and even bicycles. In some cases a total access restriction is necessary given an existing danger, such as steep gradient or a collapsing road. In other instances this reduced access can only be attributed to poor design and to a certain extent, lack of consideration for the elderly, the mobility disabled, and even advocates of active forms of transportation.

Some of the literature suggests that the greatest repercussions of barricades are often felt in terms of emergency vehicle response (Blakely and Snyder, 1997; Landman, 2003). I contacted fire fighters and police officers in order to learn about their experiences and concerns. My attempts to reach paramedics have been unsuccessful

because of their hectic schedules and my limited time. My conclusions, therefore, are only based on the experiences of the first two groups mentioned above.

At the time the existing barricades in the HRM were erected, emergency response personnel were often only informed about closures, they were seldom consulted. Planners are taking measures to ensure that emergency response crews are included in the evaluation process that leads to street closures. Emergency response institutions are always informed about all temporary and permanent street closures that happen in the city. This is usually done via fax, and in some cases a police officer noted, also by email.

I also asked what kind of measures the departments take to deal with access restrictions. I was told that staff drives around their assigned areas in order to devise alternative routes. This is particularly important for fire response personnel, because their assigned areas are more clearly delineated. Moreover, staff often gets transferred or has to temporarily substitute for crews in other departments. This is always a problem, because they may not be familiar with street closures in the new area. When a barricade seriously changes the route from a given station, emergency response teams may contact other stations located further away. This means that difficulty of access due to a barricade increases response timing in a significant way, sometimes even justifying longer travel time for the sake of better routes.

When asked if barricades significantly increase emergency response timing, most respondents commented that it depends on where the barricade is located. Some of these obstacles, for instance, are surrounded by narrow residential streets or extremely busy arterial roads. Navigating around the barricade thus becomes difficult and time-consuming. Some emergency vehicles have more trouble navigating than others: a police

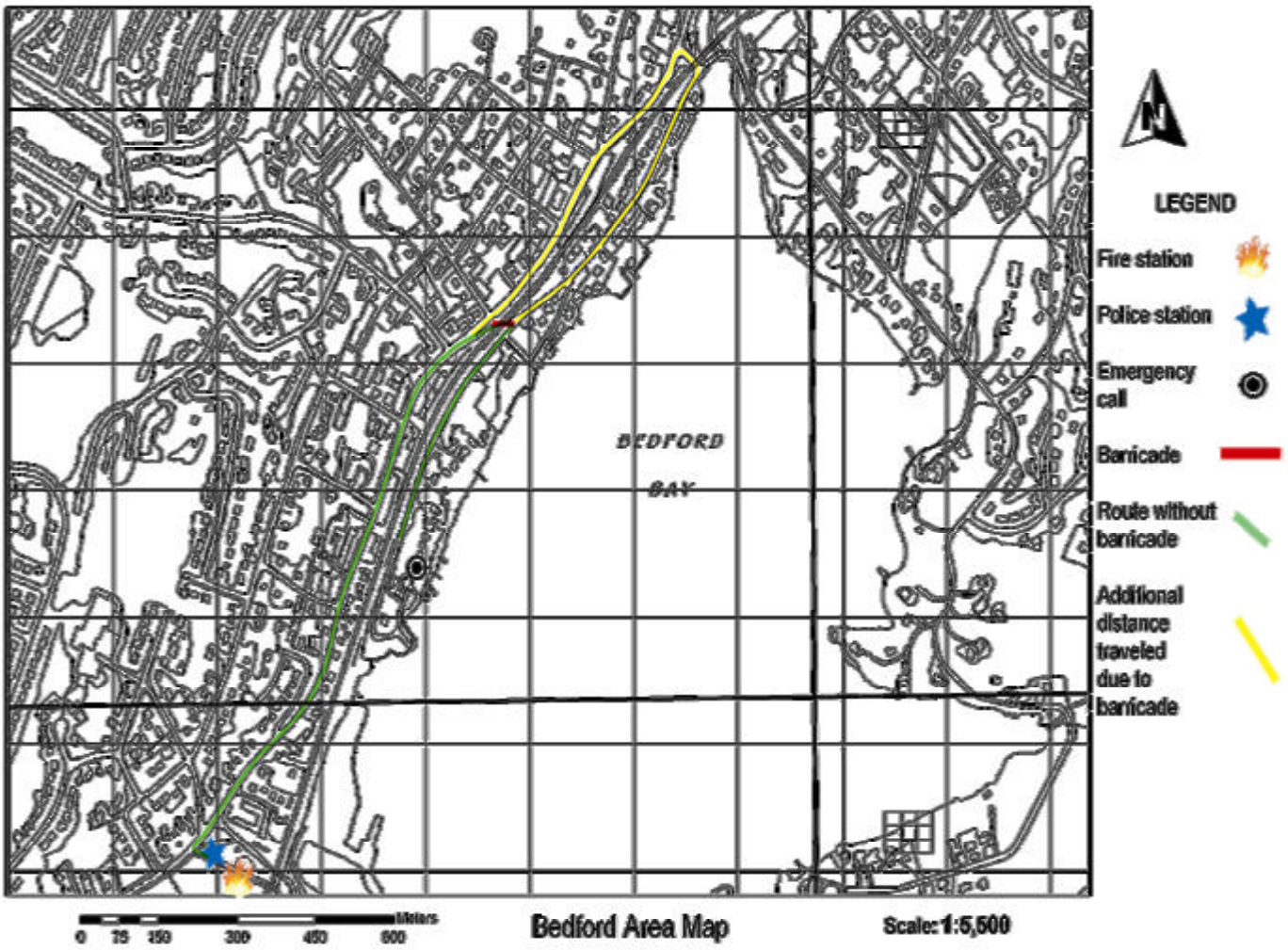
car could have less difficulty with narrow streets than the oversized fire response truck. One fire fighter commented that some closures may require crews to carry their equipment over a considerable distance. He compared this situation with a forest fire, where equipment needs to be carried a significant distance, sometimes also over obstacles. There is also the issue of exiting the site after the emergency has been contained. Barricades often create a dead end without offering the roundabout shape of a cul-de-sac, this turns exiting into a time-consuming exercise on maneuverability. Moreover, barricades also pose a problem for emergency vehicles like police cars, which sometimes face a situation that requires them to engage in the pursuit of a suspect.

Partial closures offer the same restrictions and problems in terms of emergency access. Streets partially severed with wider lips cannot be entered by oversized vehicles. Even police cars cannot enter these narrow roads because, as one officer points out, the police have to lead by example, and cannot disobey traffic rules or make maneuvers that may jeopardize the safety of others.

One of the most important findings I made through the interviews is about the different consequences of barricades in urban and suburban areas. Fire fighters told me that emergency response timing in urban areas is not affected too drastically by barricades. In the urban core, streets are laid out in a tight grid pattern; this makes navigating around barricades relatively easy and less time-consuming. The case is very different in suburban areas, where streets are narrower and follow organic layouts. Figure 4 shows one of the most dramatic differences between real and possible emergency response timing. The map shows the barricade located on Islandview, between the Bedford Highway and Shore Drive, and the route that emergency response

crews are forced to take in order to respond to an emergency in the most secluded parts of Shore Drive. The barricade forces a delay which is also enhanced by narrow streets and sharp turns. Other options could be to transport equipment by hand and over the rail tracks, or to request the help of another emergency response station; the nearest fire station after the one shown is in Middle Sackville. All the options above imply a delay of potentially fatal consequences. Are the factors that planners sought to resolve by erecting the barricade relevant enough to justify this delay in emergency response?

Figure 4: Difference in emergency response route due to a barricade



All respondents agreed that barricades make their job more difficult. Some said that a lot more care has to be exercised when driving; another fire fighter noted that there was an obvious convenience addressed by the barricade, such as shortcutting, and the removal of this option also affects emergency response timing. Only one police officer disagreed with the rest of the respondents, stating that even though barricades are sometimes a hindrance, they are planned to have the minimal possible impact, and that response crews know of these measures well in advance, and can therefore plan accordingly.

A recent study on housing fire statistics conducted by the Canadian Mortgage and Housing Corporation (2004) found a correlation between fire death rates and the location of the fire. The death rate increases as fires occur further away from urban areas. Most of the streets barricaded in the HRM happen in suburban areas, where emergency response institutions are dispersed over greater distances and street layouts make it harder for their vehicles to maneuver. There needs to be a more thorough and comprehensive evaluation process for barricades in suburban and rural areas, one that considers this increase in fire death rates. Moreover, all unintentional access restrictions to the mobility disabled, and all partial closures occur exclusively in suburban areas. Perhaps more in-depth studies must be conducted for suburban closures. Solutions to traffic problems are not always universally applicable.

ARE THERE ALTERNATIVES TO BARRICADES?

Considering the overall area of the HRM, there are not too many public streets in which access has been closed or restricted. This has a great deal to do with current

reevaluations and the adoption of new approaches such as the Neighbourhood Shortcutting policy. This policy was created after a 1994 transportation study predicted that traffic infiltration in neighbourhood streets would continue to occur, exacerbated by increases in density and road pressures. Before the adoption of this policy, there was no written set of guidelines that directly addressed street closures in the Halifax county or any of its surrounding cities/counties. Traffic problems were solved on an individual basis, and solutions decided upon without a comprehensive policy.

The Neighbourhood Shortcutting policy considers different traffic calming measures, and does not necessarily encourage street closures. All of the existing barricades were erected before the passing of this new document; no closures have been made since the policy was approved in July 1996. The policy does not encourage street closures without a careful and lengthy evaluation process. Closures are considered extreme measures. However, barricades will still be erected when other solutions seem ineffective.

The Neighbourhood Shortcutting policy may still need other revisions: HRM planners mentioned that the elements required by the policy, such as data gathering, assessment, and public participation took as long as five years in the first few cases. It is likely that in the long time before the implementation of appropriate measures, the problem itself may change and the measure originally considered could become no longer effective. Planners believe this long implementation time is the natural result of working with a new policy. Moreover, they initially addressed some of the most difficult problems with the policy; they expect to see improvements soon, both in terms of timing and success.

There is a considerable number of measures that could potentially reduce traffic nuisances in neghbourhood streets. Some are design intensive, while others advocate more neighbourhood participation. I have researched some of these options, with the hope that they can be applicable in the HRM.

Southworth and Ben-Joseph (2003) discuss the adoption of a "unified street principle" in residential streets. The idea is to create an environment that shares pedestrian activity and vehicular movement without giving particular preference to the latter. This concept involves design ideas that avoid conventional, paved streets separated from sidewalk in terms of materials, shape and height. Streets with a continuous surface that pedestrians are also meant to use will encourage drivers to slow down. Moreover, the use of speed deterrents such as trees, planters and benches can easily be incorporated. Streets with more pervasive traffic problems could also incorporate features such as narrow pavements and other conventional traffic calming measures that do not necessarily close access. However, this requires consideration of the standards required for efficient emergency response access[3]. The Unified Street principle was first introduced in Britain in 1974 with great success, and has since been adopted in many places, including Japan and Israel. Another benefit offered by unified streets is the increased opportunity for social interaction among neighbours.

The idea of equal street use by pedestrians and vehicles led to the creation in the Netherlands of the "woonerf" street pattern (Poulton, 1982). This concept entails street features designed by and for local residents. In the woonerf, pedestrian uses predominate over automotive traffic, and streets are redesigned in pleasant and attractive ways that

[3] For instance, a study made in Portland, Oregon found that the minimum acceptable street width for efficient emergency response vehicles is 18 feet (Handy et al. 2004).

enhance livability. The limitations of the woonerf are that it is neither simple to plan nor cheap to construct. It also involves extensive neighbourhood participation, something which could be a lengthy process. However, given the current delays in the implementation of the Neighbourhood Shortcutting policy, the woonerf would provide great results in the same amount of time or less, while enhancing the aesthetic value of neighbourhood streets.

The conventional pattern and hierarchy of North American streets make the woonerf a suitable addition to the Canadian road system (Poulton, 1982). The woonerf would be most effective in grid street patterns because it provides short street segments that would be easier to convert. Moreover, the short city blocks within a tight grid system could become "natural units" for woonerf conversion. The woonerf street pattern has also been used in curvilinear suburban streets.

Woonerf and principles of unified Street benefit greatly from an efficient arterial road network. There are in fact many advantages to efficient arterial flow. For instance, well connected[4] arterial patterns may decrease overall vehicle travel. This decrease is attributed first to the dispersal of vehicle trips, and second, to a decrease in the amount of vehicle travel when an adequate network of arterials is provided (Handy et al. 2004). The advantages of increasing the number of arterials and the links among them will also benefit emergency response vehicles by providing greater access and reduced travel time. When developed properly, healthy arterial flow can also reduce shortcutting in neighbourhood streets simply by reducing the need. Moreover, traffic calming measures and connectivity must go hand in hand. Access restrictions alone will only displace the

[4] A recent study in the Portland, Oregon area defined connectivity as the number of intersections per mile of arterial streets (Handy et al. 2004).

problem elsewhere, where it will increase congestion and travel time just the same (Landman, 2003). By increasing fast, efficient arterial flow and public transit, planners are addressing the problem in a more general scale, thus benefiting the region as a whole. This is not to say that traffic calming measures are ineffective, but they only take care of nuisances in a very localized and NIMBYstic way. Good arterial flow can occur not only in urban areas, but also in suburban street networks. Advocates believe that hybrid street patterns of gridiron and curvilinear roads provide the opportunity for increases in connectivity and thus, efficient traffic travel time and dispersal (Handy et al. 2004).

Other street safety advocates promote more unorthodox approaches to traffic calming in neighbourhood streets. David Engwicht, for instance, believes that restoring the human element in residential streets is the most effective traffic calming measure (2003). He argues that high speeds and shortcutting in residential roads can best be avoided when people reclaim the streets with elements of intrigue and uncertainty. Engwicht argues that vehicles often push residents into a psychological retreat that inhibits them from reclaiming their streets as playgrounds for children and places for social interaction. Furthermore, signs and other conventional traffic calming methods turn the streets into predictable environments for motorists. These current methods add a false sense of security for motorists, and convey the message that streets are predominantly the realm of the vehicle. Simple symbols of continuous human use such as toys, on the other hand, would make motorists more alert and cautious, weary of unexpected situations. In other words, by increasing human activities in residential streets, and thereby making the environment less predictable for motorists, neighbourhoods can decrease non resident traffic. Finally, Engwicht also states that

street design should be in the hands of the community rather than city officials. He believes that the limited tools possessed by planners and other city officials are the main culprits in the creation of predictable environments that promote traffic problems. If local residents had more input in the design of, and the elements that characterize their streets, then roads would have the required elements of intrigue and uncertainty necessary to increase safety and livability.

RECOMMENDATIONS

Although Engwicht's ideas are not applicable in every place and context, in some cases, either alone or in conjunction with other measures, they may yield satisfactory results. Most traffic calming measures, including street closures, cannot be applied everywhere in the same manner, or expect the same results. All measures currently implemented, as well as new design ideas and pledges for greater neighbourhood participation must be carefully evaluated in the particular context in which they will be used. No measure is universal or fool proof. Planners need to consider a wider range of traffic calming measures.

Barricades can be efficient traffic calming devices in some cases, but there are some considerations that planners need to keep in mind. Since some of the most serious implications of barricades are felt by emergency response vehicles, these institutions need to be deeply involved in the evaluation process. Emergency response personnel noted that they have rarely been consulted in the past, only notified of closures once these have taken place. However, HRM planners assure that the new measures ensure the participation of fire fighters, police and ambulance drivers.

With already existing street closures, and where these intrude with emergency response timing, planners should consider options such as replacing solid barricades with swinging/removable ones that could be easily opened in case of an emergency. Barcelona and other European cities restrict access in certain public streets with electrically operated bollards. Once peak traffic hours end, or if an emergency arises, these bollards sink into the pavement allowing vehicles to navigate through. Swinging or lifting gates are just as effective and less costly to install.

It is also important to consider the limitations of the elderly and the mobility challenged. The barricades that unintentionally restrict access to these groups need to be redesigned. Moreover, new standards must be introduced in the Neighbourhood Shortcutting policy to avoid mistakes of this kind from happening again.

Most of the street closures on the list provided by the HRM were created a long time ago. Some of the reasons that prompted the adoption of the access restrictions may not exist anymore; others could now be addressed with less severe traffic calming measures. An evaluation of all existing barricades is therefore necessary in order to remove those no longer needed, especially when these significantly obstruct emergency response routes or access by the mobility disabled.

CONCLUSION

Public street closures in the HRM are reactions to local traffic nuisances such as high speeds, high traffic volumes and shortcutting. Barricades do not seem to interfere with access to open spaces and do not seem to attempt the exclusion of certain people from enjoying amenities and public spaces. The principles of defensible space which

have encouraged many public street closures in the United States and Britain do not seem to play a significant role in the erection of barricades in the Halifax area. This is perhaps due to a lower fear of crime in Canada, especially outside of large cities like Vancouver, Montreal and Toronto.

Most of the street closures in Halifax are located in suburban areas. It is also exclusively in suburbs where barricades unintentionally restrict access to pedestrians, cyclists and the mobility challenged. Moreover, the organic patterns of suburban streets combined with barricades are creating the most dangerous implications in terms of emergency response access. I am not advocating for the complete abandonment of these measures, but I hope to convey that it is important to understand the consequences that barricades and other closures may create. The use of barricades is starting to be reevaluated in the HRM. Perhaps they will be combined with other solutions, or saved for those pervasive situations where other measures have been ineffective. It is also important to remember that no traffic calming measure is universally applicable or universally successful. One must therefore consider local elements to devise appropriate solutions.

Planners also need to be aware that just like trends and values change, so do the reasons that call for certain measures and the consequences they create. If barricades are not currently dividing neighbourhoods by income or ethnic background in Halifax, it is important to know that they are tools of segregation in other places. As planners, we have to be aware of these implications in order to recognize their possible appearance in our areas.

In the search for pedestrian safety, for peace and comfort in neighbourhood streets, planners have the duty to continually reevaluate their tools and experiment with new alternatives that may improve the livability of our cities and neighbourhoods without jeopardizing efficient emergency response or equal access opportunities.

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APPENDIX 1: Inventory framework

Inventory Framework – restricted access streets

Street address:

Barricade
[ ] permanent [ ] removable

Materials
[ ] concrete [ ] wrought iron [ ] wood
[ ] other:

Design description:

Access restricted by barricade
[ ] vehicles only [ ] all access (sidewalk)

Type of road barricaded
[ ] residential [ ] arterial [ ] collector [ ] highway

Type of connecting roads
[ ] residential [ ] arterial [ ] collector [ ] highway

Nearby amenities
[ ] park [ ] school [ ] church [ ] community centre
[ ] shopping centre [ ] waterway [ ] other:

proximity to barricaded street (in blocks):

distance of nearest emergency response institution:
type of institution:

Type of homes along street
[ ] single unit [ ] duplex [ ] townhome [ ] apartment building
[ ] mobile [ ] other:

Reason for closure:

APPENDIX 2: Interview form 'B'

Interview form 'B' (emergency response personnel)
Restricted access streets in the Halifax Regional Municipality

1) Could you tell me where the streets with restricted access in your area are located?

2) What measures does your department take to deal with streets where access has been restricted?

3) Can you estimate how much longer it may take you to enter X street (barricaded) rather than Y street (open) from your station?

4) What could be the consequences of access restriction in case of a serious emergency?

5) In your experience, do you think that restricted access streets make your job more difficult?

APPENDIX 3: Interview form 'A'

Interview form 'A' (planners/engineers)
Restricted access streets in the Halifax Regional Municipality

1) In your experience, what are the most common issues that neighbourhoods seek to resolve by restricting street access?

2) How many applications do you receive per year? How many are usually approved?

3) Section 6.1 of the Neighbourhood Shortcutting Policy states that volume, speed and collision data will be collected to determine if a problem exists. How long does this process take? What happens if the City decides there is no significant problem?

4) In the evaluation process, is attention given to emergency response time and access?

5) The Neighbourhood Shortcutting Policy describes several steps, including extensive public participation, before a street can be closed. How long would you estimate it takes, in average, for an application of this type to be approved?

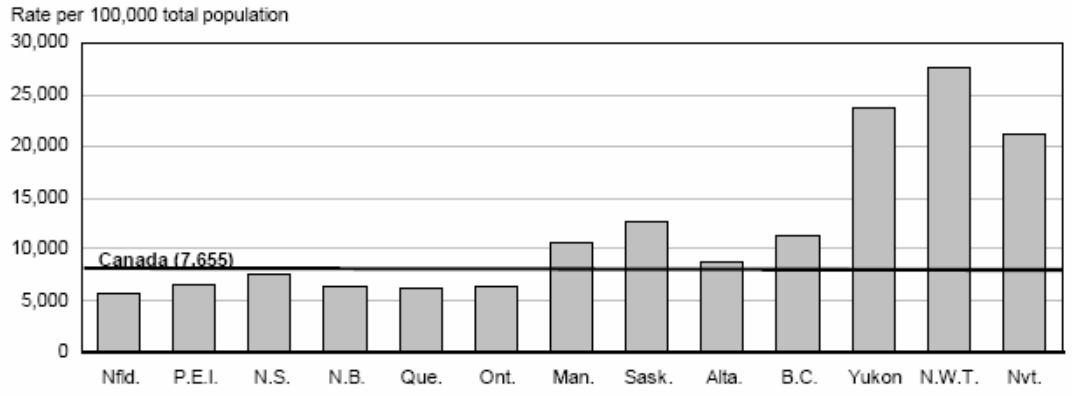
6) If a project is approved as permanent, can the barricade be removed by the City at a later time? Has this been done in the past?

7) Are neighbours charged for the expenses incurred by any of the steps listed in the policy? If so, how?

8) Does the HRM decide on the closure of a public street more often than a neighbourhood? Is the process different than when neighbours petition for this to happen (i.e. Are public meetings still held)?

APPENDIX 4: Canadian crime statistics

Crime rates by province and territory, 2000



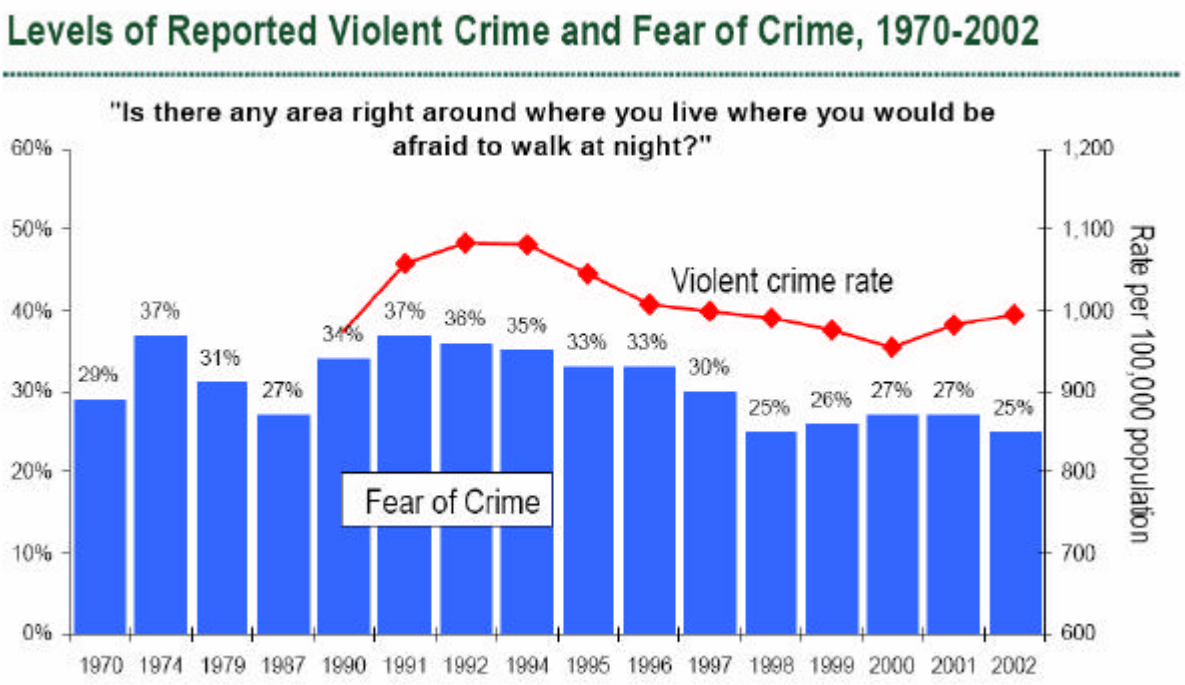
Crime rates for census metropolitan areas

CMA[2]	Violent crime		Property crime		Total *Criminal Code*[1]	
	2000 rate[3]	% change in rate 1999-2000	2000 rate[3]	% change in rate 1999-2000	2000 rate[3]	% change in rate 1999-2000
Regina	1,590	-6.6	8,414	-1.0	14,769	-2.4
Saskatoon	1,485	11.3	6,843	6.0	12,891	10.5
Vancouver[4]	1,107	-0.7	7,263	-6.2	11,210	-2.8
Victoria	1,118	-11.6	5,540	-15.6	10,594	-10.5
Winnipeg	1,356	10.5	5,707	2.5	10,377	6.7
Halifax	1,164	12.0	5,402	-6.7	9,249	-3.7
Thunder Bay	1,384	-8.9	4,275	2.7	8,900	-2.0
London[5]	838	-5.3	5,307	0.9	8,721	1.6
Edmonton	941	8.2	4,680	-2.6	8,377	-1.9
Montréal	921	9.0	4,399	-3.0	7,234	1.1
Calgary	879	2.7	4,510	-11.2	7,115	-6.6
Windsor	755	1.8	3,831	9.0	7,086	7.5
Sudbury	974	2.8	3,727	1.2	6,784	3.5
St. John's	851	-1.6	3,831	12.6	6,759	9.6
Hamilton	1,007	2.5	3,565	-7.8	6,565	-2.7
St. Catharines-Niagara[5]	623	0.7	3,705	-8.4	6,546	-4.5
Hull[6]	771	17.7	3,686	-2.9	6,415	3.9
Saint John[5]	1,046	1.2	2,836	-9.1	6,277	-12.4
Kitchener[5]	689	3.1	3,744	-7.3	6,110	-4.3
Sherbrooke	438	10.0	3,927	0.8	5,829	--
Ottawa[7]	690	-5.3	3,328	-15.7	5,680	-11.5
Toronto	868	7.5	2,939	-6.8	5,290	-2.1
Trois-Rivières	456	-3.8	3,280	-5.6	5,207	-6.4
Québec	514	10.5	3,127	0.9	5,108	4.8
Chicoutimi-Jonquière[5]	563	-1.1	3,138	-5.4	5,104	-3.0

[1] *Total Criminal Code offences also include other Criminal Code offences not shown in this table, but excludes traffic offences.*
[2] *A Census Metropolitan Area typically comprises more than one police service. Also, please note that the Oshawa Census Metropolitan Area (CMA) is excluded from this table due to the incongruity between the police agency jurisdictional boundaries and the CMA boundaries.*
[3] *Rates are calculated on the basis of 100,000 population.*
[4] *As a result of labour action, from September to December 2000, there was a decrease in the number of theft crimes reported to Vancouver Police. This affects both the total property crime and the total Criminal Code figures when comparing to previous years.*
[5] *Populations were adjusted to follow policing boundaries.*
[6] *Hull refers to the Quebec portion of the Ottawa-Hull Census Metropolitan Area.*
[7] *Ottawa refers to the Ontario portion of the Ottawa-Hull Census Metropolitan Area.*

Source: Canadian Crime Statistics by the Canadian Centre for Justice Statistics
http://prod.library.utoronto.ca:8090/datalib/codebooks/cstdli/justice/2001/2000_crime_e.pdf 11/08/04

APPENDIX 4 Cont…



Source: Crime trends, demographics, and public perceptions of the criminal justice system. Presentation prepared by the Canadian Department of Justice in 2002.
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