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## Assessing London, Ontario's brownfield redevelopment effort to promote urban intensification

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Intensification of existing urban areas is currently a major item on the policy agenda of the Ontario and Canadian governments. As part of the urban intensification drive, brownfield sites have become major candidates for redevelopment. Governments at all levels have initiated policies and programmes to encourage their remediation and redevelopment. This paper reports the findings of a qualitative exploration of brownfield redevelopment in London, Canada. Through in-depth interviews ( $n = 17$ ) with key stakeholders involved in brownfield redevelopment, the study explores the level of participation in brownfield redevelopment, barriers to brownfield redevelopment in the city, and perceptions about financial incentives in the city's Brownfield Community Improvement Plan. The study found that despite the availability of financial incentives, the overall private sector participation in brownfield redevelopment is low due to barriers such as competition from greenfield, risk, cost, negative public perception of brownfields, and complex remediation processes. The paper provides policy suggestions that may contribute to a more active participation in brownfield redevelopment in the city.

**Keywords:** brownfields; redevelopment; brownfield policy; London

### 1. Introduction

Urban intensification is a critical policy agenda item for the Ontario government, as well as for the government of Canada, as a whole, and other advanced economies. Policy-makers see intensification as an efficient use of land to accommodate new urban growth and reduce pressure on open spaces and farmlands, as well as a key to revitalise city centres, make them more people-focussed and liveable, and raise the quality of neighbourhoods and public life. The Ontario provincial government demonstrated its commitment to the intensification agenda in its 2005 policy strategy *Places to grow*. This policy declared that by 2015, at least 40% of new development will take place within already built-up metropolitan areas and satellite communities (Government of Ontario 2005).

Due to urban intensification efforts, vacant and underutilised properties have become major candidates for redevelopment, including former industrial and commercial properties and contaminated lands (called brownfields). Although redevelopment of these sites dates back to the 1990s (see De Sousa 2001), interest in their remediation and redevelopment has grown tremendously in recent years. Legislative reforms since the early 2000s demonstrate

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this increased interest, as do various financial tax incentive programmes created to encourage interest and participation in brownfield redevelopment from municipalities and the private sector. Various policies and programmes support brownfield remediation and redevelopment, but major policy challenges still exist, and many stakeholders are reluctant to get involved (see also McCarthy 2002, Alberini *et al.* 2005; De Sousa 2005; Solitare 2005, De Sousa 2006, Herbele and Wernstedt 2006).

This present study assesses London's Community Improvement Plan (CIP), which is aimed at redeveloping brownfield sites to promote urban intensification, and points to barriers and prospects of brownfield initiatives that have policy implications. This study addresses three questions: To what extent are policy initiatives being translated into practice? What are the strengths and weaknesses of the policy initiatives? How can these challenges be overcome? To answer these questions, this paper aims to (1) gauge benefits of, and the level of participation in, brownfield redevelopment, (2) identify any major barriers to successful brownfield redevelopment in London, and (3) explore perceptions about financial incentives in the London Brownfield CIP. This study uses in-depth interviews with key stakeholders to assess the extent to which policy initiatives are being translated into practice.

To date, no intensive study has focused on a mid-sized Canadian city's experience with brownfield incentives, and no study has attempted to gauge the extent to which policy objectives are being implemented in a typical mid-sized Canadian city. A study on such cities is important for two reasons. Mid-sized and smaller cities are more characteristic of North American and European urban systems where underutilised industrial and commercial brownfield sites have become prominent features in their urban landscapes. Furthermore, by the virtue of their size, smaller- to mid-sized cities have fewer underutilised sites and, therefore, are more manageable. Overall, we hope that the empirical findings from this study will not only fill gaps in knowledge but also suggest alternative policy options for mid-sized cities, and even larger ones.

## 2. A brief overview of the brownfield policy environment in Ontario

Brownfields are a major policy concern in cities across North America and Europe. They are associated with a variety of neighbourhood problems, including crime and declining property values (Bartsch and Collaton 1996, Wright 1997). Several studies have called for brownfield redevelopment as a means to address these concerns, as well as a means to prevent urban sprawl, deliver more compact cities, increase housing supply, increase the tax base of cities, contribute to urban renewal, improve the social conditions of local communities, and promote environmental clean-up (see Roseland 2000, Alker and McDonald 2003, Dixon 2006, Raco and Henderson 2006, Williams and Dair 2007, Dixon and Adams 2008).

Estimates vary, but as many as 100,000 brownfield sites are dotted across the Canadian landscape (Ontario Ministry of Municipal Affairs and Housing 2009). As elsewhere, Ontario's planning and development processes show a strong emphasis on sustainable development principles (Filion and McSpurren 2007), with the goal of managing growth and development in a manner that supports economic prosperity, protects the environment, and helps communities achieve a high quality of life (Government of Ontario 2005). Policy-makers' emphasis on sustainable development is strongly linked to their emphasis on urban intensification. In particular, they stress using abandoned industrial and commercial properties.

Provincial, territorial, and local governments bear the most responsibility for administering brownfield redevelopment in Canada, with local governments bearing the most

responsibility for funding. Governments leave the responsibility for redevelopment to the private sector, though they play the role of facilitators (De Sousa 2000), especially the legislative role to facilitate brownfield redevelopment. In 2001, the Ontario government passed the *Brownfield Statute Law Amendment Act of 2001*, with the goal of removing barriers relating to regulatory liability, financing, and planning. More recently, as part of the *Budget Measures and Interim Appropriation Act, 2007* (Bill 187), the government introduced new legislative reforms to facilitate brownfield redevelopment (Ontario Ministry of Municipal Affairs and Housing 2009). In addition to their legislative role, governments also provide guidelines for redevelopment. The Ontario Ministry of the Environment's (2004) *Record of Site Condition* regulation outlines the conditions that property owners must meet to redevelop a brownfield site, including procedures for assessing its environmental condition and preparing it for reuse (Ministry of the Environment 2004).

The Ontario provincial government also provides the private sector with limited financial incentives to invest in brownfields. However, municipalities have the lead role for ensuring the success of any brownfield redevelopment plan, and they bear the primary financial responsibility. In many municipalities, the private sector receives financial assistance through a CIP. A CIP is an expression of a city's intention to facilitate revitalisation and typically provides both financial incentives to stimulate investment and funding to offset redevelopment costs, often through grants, loans, and tax assistance.

London became involved in brownfield redevelopment through a growing interest in sustainability, environmental concerns, infill development, and intensification (City of London, Department of Planning and Development, Department of Planning and Development 2006). London's involvement was consistent with efforts in Ontario to raise awareness about the need to manage growth more efficiently. On 23 January 2006, the London municipal council adopted a CIP to provide financial support for brownfield redevelopment: \$100,000 in 2006, \$250,000 in 2007, and \$500,000 per year from 2008 to 2010 (City of London, Department of Planning and Development 2006). Through financial incentives in the CIP (grants, tax assistance, and rebate programmes), the council intended to reduce the cost of brownfield redevelopment. The City of London's philosophy is that a project's public benefit should justify the cost of the financial incentive (City of London, Department of Planning and Development 2006). The city considers each site's redevelopment on a case-by-case basis to ensure that it is both cost effective and in the public interest.

In spite of the municipal support, the city of London does not have a brownfield inventory to identify the location of brownfield sites or the magnitude of the problem. The city of London is not alone in this regard; such inventories are rare for Canadian cities. Indeed, Hayek *et al.* (forthcoming) recently outlined the need to identify these sites and presented a method for identifying current and past hazardous sites. In particular, the authors argue that planners and policy-makers need to know the extent of a city's brownfield problem before they attempt to create effective policies and legislations for redevelopment and before developers and municipalities make large monetary investments.

Currently, the only information available on the extent of the problem is the recent preliminary study by Hayek (2009), who traced the progression of *potential* brownfield sites from 1881 to 2001. The study shows that early brownfield sites were mostly concentrated around the downtown core of the city. As years progressed, the sites began to radiate throughout the entire city.

Similar to the issue of a lack of a brownfield inventory, little financial data exist on the market value of contaminated sites and the typical remediation costs of these sites. Anecdotal evidence suggests that the market value of former industrial land in the city over the last 3 years ranged from about CDN\$60,000.000 to over CDN\$2.7 million (Table 1).

Table 1. Sample of former industrial land value in the City of London.

Property	Industrial land value (CDN\$)	Area per square metre (m <sup>2</sup> )	Value per m <sup>2</sup> (CDN\$)	Year assessed
118/120 Pine Valley Blvd	68,000.00	188	120	2007
1446 Fanshaw Park Road	223,000.00	1921	116	2008
753 Dundas Street	320,000.00	890	360	2007
570 Nelson Street	360,360.00	5123	70	2008
10 Centre Street	403,500.00	26,015	15	2008
262 South Street	500,000.00	5038	99	2005
41 Adelaide St North	725,000.00	6123	129	2009
511 McCormick Blvd	843,250.00	8313	101	2008
738 King and 380 Lyle Street	2,460,000.00	11,425	215	2009
1156 Dundas Street	2,750,000.00	46,740	27	2009

Source: The Municipal Property Assessment Corporation (MPAC) 2009.

Note: The above properties are a random selection of typical sites from recent years.

Likewise, the costs of remediating these sites varied widely, depending on the type and size of property, as well as on the level of contamination. For instance, recent records from the Planning Department of the City of London show that phase II site remediation costs ranged from approximately CDN\$200,000 (e.g. Nelson Park, Inc. Property – a former industrial property) to as high as CDN\$840,000 (e.g. The Medallion Properties).

In terms of the number of remediated properties, available data indicate limited brown-field redevelopment activity in the city; only 12 properties have been the subject of remediation since 2006. Typically, the conversion of properties has occurred throughout the city, with most properties converted to high-density residential units and office spaces.

### 3. Methods

This study explores the extent to which brownfield policy is translated into practice, using London as a case study. We selected London because it represents a typical mid-sized Canadian city in terms of population size, composition, and economic indicators (Table 2). Located in south-western Ontario, London is approximately the 10th largest Canadian city, with a CMA population of 457,720 (Statistics Canada 2006). Furthermore, London has made brownfield redevelopment a key component of its urban agenda.

The study uses in-depth interviews ( $n = 17$ ) to address the research questions and objectives posed in the introduction above. Using this approach, we were able to gather relevant information about the perceptions of those who are directly involved in brownfield

Table 2. Selected population characteristics of the London CMA, Ontario, and Canada (2006).

	London	Ontario	Canada
Population in 2006	457,720	12,160,282	31,612,897
Population change %: 2001–2006	5.1	6.6	5.4
Median age	38.6	39	39.5
Median earnings, persons aged 15 years and over who worked fully, full time (CDN\$)	42,746	44,748	41,401
Total population with a university Bachelor's degree or higher	68,046	2,012,060	3,985,745
Unemployment rate	6.1	6.2	6.6

Source: Statistics Canada (2006).

redevelopment and the implications of various brownfield redevelopment policies. Because qualitative research is not intended to make a sweeping generalisation, the samples are not intended to be representative (Baxter and Eyles 1997). Respondents were selected for maximum variation in level of experience and participation in a brownfield-oriented project, knowledge of brownfield redevelopment, and involvement with brownfield policy-making in London. Respondents were drawn from the public sector (i.e. city planners, city councillors), the private sector (i.e. private developers, private landowners), and various interest groups. City officials and councillors were the originators of the policy, and they had an in-depth knowledge of the subject matter. The private sector representatives were the beneficiaries of officials' policies; their experiences and understanding of policies that will drive brownfield redevelopment were equally important to this study.

Interviews, which lasted between 40 and 90 min, were conducted over 12 months, from May 2008 to April 2009, by the lead author. In each interview, respondents were asked a series of semi-structured, open-ended questions from an interview checklist. The questions focused on respondents' perceptions of brownfield redevelopment, including their experience with brownfield redevelopment, effectiveness of London's brownfield redevelopment incentives, motivation for brownfield redevelopment, benefits of brownfield redevelopment, and barriers to brownfield redevelopment in the city. The order in which questions were asked varied according to participants' responses (Quinn-Patton 1990). Each interview was tape-recorded and transcribed verbatim.

The themes and constructs related to the primary research objectives guided the analysis. We created the key response categories prior to line-by-line coding, which is generally considered the most appropriate coding process (Strauss and Cobin 1990). This interactive and inductive process allows the data to direct the development of themes. We used the same coding scheme for all interviews, as this is the most effective way to identify similarities and differences among individual responses. We coded the transcripts according to three themes (i.e. benefits of brownfield redevelopment, barriers to brownfield redevelopment, and effectiveness of financial incentives) and reviewed the key categories several times to ensure that concepts pertaining to the same phenomena were placed in the same category. Additionally, we employed a number of strategies to ensure that we analysed the data consistently, such as using a comprehensive topic list (Patton 1987, Krefling 1991).

#### 4. Results

Results are organised around the three main objectives of the study. First, we examine respondents' views on the benefits of brownfield redevelopment and participation in CIP's incentive programmes. Second, we explore the barriers to private sector participation in brownfield redevelopment. Third, we discuss the perception that financial incentives promote brownfield redevelopment. Tables 3 and 4 help report results by providing the number of interviews in which particular concepts were mentioned (Morgan 1993, Miles and Huberman 1994). Additionally, direct quotations from transcripts illustrate selected themes and serve to contextualise the responses.

Due to the relatively small sample size, this paper uses pseudonyms for the participants to preserve their anonymity. Additionally, this paper uses the following abbreviations to identify various interest groups: SCP, Senior City Planner; PD, Private Developer; PO, Property Owner; MPC, Member of Planning Committee; ECA, Environmental Cleanup Agency; EDO, Economic Development Organization; and NPIG, Non-Profit Interest Group.

Table 3. Key benefits of brown field redevelopment.

Type of benefits	No. of interviews in which mentioned ( <i>n</i> =17)
Efficient urban development	11 (65%)
Improvement in tax base	8 (47%)
Enhancement of environmental quality	8 (47%)
Neighbourhood revitalisation	7 (41%)
Creation of economic opportunities	7 (41%)
Utilisation of existing infrastructure	6 (35%)

Note: More than one type could be mentioned in each interview.

Table 4. Significant barriers to private-sector participation.

Type of barrier	No. of interviews in which mentioned ( <i>n</i> =17)
Competition from greenfield	14 (82%)
Risk	11 (65%)
Cost	8 (47%)
Liability	8 (47%)
Public's perception of brownfield	7 (41%)
Remediation process	5 (29%)

Note: More than one type could be mentioned in each interview.

#### ***4.1. Benefits of brownfield redevelopment and participation in incentives programmes***

Participants unanimously agreed on the environmental, social, and economic benefits of brownfield redevelopment. As one respondent commented,

It reduces contamination and encourages remediation, and improves the quality of life. It also encourages the use of vacant or underutilized sites in the city which generates tax revenue, and ensures efficient use of land. (Eric, SCP, February 2009)

Other respondents noted that brownfield redevelopment improved the use of existing municipal services and infrastructure and reduced development pressures on greenfield areas:

There's great benefit to the municipality financially of taking advantage of existing municipal services, whether it's the snow plow and garbage pick-up or the transit. These services are being run through areas where the brownfields exist. . . (Mary, MPC, May 2009)

Brownfield sites are located where services are already provided it's a real waste to see those lands sitting idled or underutilized. If you can redevelop those sites, you're making better use of existing infrastructure, you're growing in a way that's more compact, more intense as opposed to relying strictly on greenfield developments for growth. (Bill, SCP, March 2009)

Participants frequently mentioned the benefits of brownfield redevelopment, noting that redevelopment generates tax revenues, fosters neighbourhood revitalisation, increases

infill development, revitalises the downtown core of a city, and prevents urban decay and associated issues, such as crime.

The redevelopment fosters neighbourhood revitalization, it's consistent with councils' desires that we provide opportunities for revitalization, redevelopment close to downtown London in order to support downtown. (Charles, SCP, March 2009)

One benefit of brownfield redevelopment is that it makes for a more vibrant community, particularly again looking at our downtown area, the more ways we can continue to foster growth in the downtown the better we are from a city standpoint. I think just having a strong city core is important. . . what people feel about the city in the strength of the city but I think the second part of that is really that it does continue to breed more growth. . . (Paul, EDO, February 2009)

As illustrated by these quotes, the participants were generally aware of, and appreciative of, the potential benefits of brownfield redevelopment. Nevertheless, evidence from our sample suggests a low participation rate in the city's brownfield programmes; only one of the eight private developers interviewed took advantage of the incentives offered in the city's brownfield redevelopment programme since 2006. This low participation was confirmed by a number of city officials, as noted by one interviewee, "participation in our programme has been extremely low up to this point. . . private developers have not taken advantage of the incentives provided in the City's CIP". The interviewees attributed the low participation rate to a number of barriers.

#### **4.2. Barriers to private-sector participation**

The second objective of this study was to explore the barriers to brownfield redevelopment. Perhaps the greatest impediment to brownfield reuse is the availability of abundant greenfield sites. In 1993, the City of London annexed 25,736 ha from surrounding townships within the County of Middlesex. As a result, the city has a huge amount of undeveloped land. For instance, in terms of residential development, the 2006 Land Needs Assessment study estimated that the city has 38 years of low-density land supply, 60 years of medium density land supply, and 80 years of high-density land supply (City of London 2007). Given the abundant greenfield availability, private developers' goal to maximise profit from their investments, and the costs associated with brownfield redevelopment, it is no surprise that the development industry heavily favours greenfield development over brownfield redevelopment.

The idea that brownfield redevelopment is considered less cost-effective and entails more risk than greenfield development is well documented (De Sousa 2000, McCarthy 2002). All participants acknowledged that the abundant supply of greenfield land in London is a major barrier to brownfield redevelopment, and many noted that the immense supply of greenfield decreases the demand for brownfield redevelopment while providing a safer option for development.

There's still land available in London to be redeveloped in a greenfield setting and that's generally pretty cheap land, easy to access, develop and you don't have to worry about remediation on those sites. So, if that land is still available then that tends to attract developers in the first place rather than going to a site that might be quite complicated in terms of having to do remediation first. (Edward, SCP, February 2009)

London has a very large urban growth boundary because a lot of greenfields areas which are cheap to develop that the industry tends to want to develop on those lands as opposed to absorb some of the risks, costs and associated problems with brownfields developments. (Sherry, PD, August 2008)

It's always greenfield, it's cheap, it's easy, no hassles, in and out. . . it's greenfield, no question.  
(Mary, MPC, May 2009)

To be successful, brownfield redevelopment has to be competitive with greenfield redevelopment. Even if the costs were equal, the immense time and energy needed for brownfield redevelopment makes it an onerous process.

Another significant barrier to brownfield redevelopment is the negative public perception of brownfield redevelopment, in particular “the stigma of some old, who knows, what’s still there . . . people are still nervous with the environmental issues and so on”. This stigma is due, in part, to the fact that these sites are located in areas perceived to be “high crime zones and deteriorated areas of the city”.

Negative public perceptions about brownfield sites is still there, there’s real reluctance to get involved in the sites because there has been some past problems with certain brownfields or ones that have been developed. (Chris, SCP, February 2009)

Other participants expressed similar concerns and noted that a cultural change is needed to view the broader community benefits of brownfield redevelopment:

The whole culture has to shift, so we have to look at how do we look inward and upward, how do we change the culture? A big piece of that is urban design and being able to design buildings and communities that are higher density, that are desirable, that really add a positive contribution, and that whole sense of living in a more urban type of environment how do we make that palatable and positive? (Tom, SCP, February 2009)

The demand for brownfield redevelopment in London is low, in part because the general public lacks a clear understanding of the economic, social, and environmental benefits associated with it. However, community support is essential to the success of any brownfield redevelopment endeavour (Ellerbusch 2006). Early community involvement in the planning stage of the development process can foster understanding and acceptance and limit protest and opposition (McCarthy 2002).

The interviews also revealed that cost and risk are major barriers to brownfield redevelopment in the city, in spite of the incentives in the city’s CIP. As one participant stated, “everything comes down to cost”. Another noted that

Major barriers are the cost of clean-up and the risk issue, the way I like to put it is how do we get ourselves into a position where its risk management, so it’s intelligent risk management as opposed to risk avoidance which is I don’t need that. (Robin, SCP, February 2009)

The city will need to make a considerable investment to overcome the costs and persuade developers to accept the risk of brownfield development. As a city councillor explained, “We’d really love to see more brownfields in the city of London developed . . . and we’ve offered up a number of incentives but it’s a huge cost”.

Directly related to the issue of risks and costs is the issue of liability. A long-time city planner pointed out that the fear of future liability deters potential owners from cleaning up and selling their sites:

There’re huge liability issues with the private property owner cleaning up the properties and not knowing whether there was somewhere down the road, 10 to 20 years, still issues of migration of contaminates onto adjacent properties. There’s still a lot of hesitancy. . . (Al, SCP, February 2009)

A land holder also described how fear of liability creates a significant barrier to brownfield redevelopment. Unremediated sites must be remediated before they can be sold on the market. In some instances, though, the cost of holding an unremediated site may be less than the cost of clean-up. Additionally, an owner may choose not to sell a remediated site because of future liability concerns:

Until that property gets cleaned up its almost un-saleable. There is a piece at location X that Company Z used to own and it's so contaminated that they feel that it's cheaper just to hang onto the 12 acres of land forever. . . . If company Z sells that property, that doesn't take them off the hook if there is future issues, there could be future lawsuits that come back on company Z. So, my concern is always that you would think they might want to clean it up to release themselves of liability but then the clean-up is so expensive that they're caught in that kind of scenario. Even if we found a buyer that was comfortable with the environmental issues, Company Z would still be a nervous seller because of future claims. (James, PD, August 2008)

#### 4.3. *Perceptions of CIPs financial incentives in promoting redevelopment*

Financial incentives are intended to provide economic assistance to developers where the economic viability of a site is under question. Adams *et al.* (2000) found that redevelopment prospects hinged on the availability of financial incentives, and interview results support this view. Participants commented on the effectiveness of financial incentives provided by London's brownfield CIP. All participants acknowledged that having a CIP specifically geared towards brownfield redevelopment has value. They believed that the financial incentives included in the CIP make brownfield redevelopment more attractive, and that without those incentives, potential developers would not consider taking on a brownfield redevelopment project. Some participants stressed that incentives to remediate brownfields are necessary to induce activity, and one public sector participant acknowledged that the incentives in the CIP make it easier for developers to "deal with risk; they do not eliminate the risks but rather assist in managing them" (Tom, SCP, February 2009).

Financial mechanisms provide an incentive in the form of compensation for undertaking a brownfield redevelopment. Moreover, they level the playing field between brownfields and greenfields. Some participants mentioned that incentives relieve the demand for greenfield development by providing an alternative through brownfield redevelopment. Overall, participants indicated that incentives for brownfield redevelopment and assistance with the cost of redevelopment make brownfield redevelopment much more feasible.

These are sites that are perfect for redevelopment, they relieve the demand for moving into the corn fields and yet, with the risk and the financial burden of cleaning it up they would never get off the ground without the incentives. (George, SCP, February 2009)

A private sector developer agreed that incentives are necessary to spur redevelopment: "it's the only reason why they're being considered for redevelopment" (Alex, PD, March 2009).

In contrast to the optimism shared by the city, the interview results indicate that financial incentives alone do not assure brownfield redevelopment. Market conditions to accommodate successful redevelopment are more important than these incentives (Meyer and Lyons 2000). Additionally, the interviews revealed that due to the city administrators' lack of familiarity with the development industry, they do not know how the development industry operates. The incentives they provide do not apply to the many operational levels in the business side of the industry, and, as a result, some may be ineffective.

Well, it's not that it's practical and I don't want to be critical of the municipalities because I know the guys who wrote this but sometimes they lose sight of what the process is. . . brown-field redevelopment is a complex issue but the way the city's CIP is designed completely ignored this complexity. (James, PD, August 2008)

For example, one company desired only to sell a contaminated property, not to develop it. To do this, the site first needed to be cleaned up. However, this made the company ineligible for a development charge rebate because it was not developing the property. Most private developers interviewed suggested that the CIP should be structured to offer more incentives to the companies cleaning sites rather than the developer because in many instances the owner or seller of the property is not the developer.

To unload it, to get rid of it, to sell it, you know, that's how that thing should be structured. They should help the developer to remediate it so that he could move it, because that's the problem. . . So, the best way to structure that is, provide the incentive to people who own the brownfield stuff so they can move it. (Jamie, PD, August 2008)

Furthermore, the incentives are useful for someone who wants to undertake the entire process, but they do little to provide incentives to the middle men. The interviews showed that a major flaw in the CIP is the assumption that the entire redevelopment process is implemented by one company and one developer. This is seldom the case; redevelopment is a process that involves various independent parties. As one developer pointed out, in most cases, the owner simply wants to sell a contaminated site, not redevelop it. Unless the owner or seller knows the potential buyer beforehand, a deal cannot be struck among the seller, buyer, and city. To further complicate the matter, the end use of the site determines the degree of clean-up needed, so the seller cannot clean the site without knowing the end use.

In spite of these findings, interview results indicate that financial incentives could potentially stimulate redevelopment and that such developments centre on the availability of incentives, particularly in a city such as London where demand for brownfield redevelopment is generally low. These overall findings support the existing literature, which has shown that financial incentives aid redevelopment (Simons and El Jaouhari 2001, Lange and McNeil 2004, Wernstedt *et al.* 2006).

## 5. Discussion and policy implications

This article has provided important insights into brownfield redevelopment efforts. In particular, this paper has shown that despite the availability of financial incentives, the overall private sector's participation in brownfield redevelopment is low due to barriers such as competition from greenfields, risk, cost, negative public perception of brownfields, and the complex remediation process. These findings have several implications for policymakers in London and other cities with similar characteristics. This is especially true because developers who are the intended targets of policymaking are the same everywhere.

To start with, London's CIP is designed to eliminate environmental and economic blight in the city, based on the assumption that the future social and financial benefits provided by brownfield redevelopment will eventually outweigh the costs of the financial incentives. Although numerous stakeholders are involved in brownfield redevelopment, the local government has assumed much of the responsibility for programme implementation. However, the city needs to do more to encourage brownfield redevelopment. While the CIP has reduced some of the costs associated with brownfield redevelopment, it has not effectively

induced redevelopment. The market, not financial incentives, drives brownfield redevelopment through demand for redevelopment, which seems to be lacking in London. Because the development industry is a profit-driven industry and because many developers consider brownfield development to be unprofitable, the municipality will need to take the lead in ensuring successful brownfield redevelopment. Similarly, to stimulate brownfield redevelopment, policy-makers must address the economic problems and fears faced by land-owners, who are major stakeholders in brownfield redevelopment inasmuch as they make the decision to bring a site into the marketplace.

All participants in the redevelopment process must be able to make informed decisions about redevelopment costs and benefits. However, systematic studies on the impact of brownfield redevelopment in London, and elsewhere in Canada, are unavailable. As such, monitoring systems are necessary to evaluate the CIP and the effects of each redevelopment, though these may not be possible given the lack of understanding of the public benefits and effects of brownfield redevelopment in London. Redevelopment goals will only be achieved if the community can be assured that the development is consistent with its economic and social needs and if developers are guaranteed a return on their investment.

Brownfield redevelopment can produce a multitude of benefits, but they will not be realised until the goals of brownfield redevelopment policy are embedded in a broader set of strategically planned agendas and redevelopment projects are conceptualised in relation to broader patterns of development. Redevelopment will be sustainable only through a coordinated approach that considers how individual brownfield sites relate to the entire urban region (Raco and Henderson 2006). The conclusion is that London and other municipalities with a similar policy approach need to move beyond a case-by-case approach and place brownfields in a large-scale undertaking that seeks to revitalise multiple properties across a wider area of their communities.

The results of this study show that brownfield redevelopment is affected by the interplay among various interests, including developers and community, local and regional stakeholders, and various government agencies. A municipality can overcome barriers to brownfield redevelopment through a multi-disciplinary approach, and can succeed with redevelopment schemes only through a balanced and coordinated planning process (Williams and Dair 2007).

The results further show that municipalities' role in brownfield redevelopment is paramount. Such roles include engaging local citizens, enticing the local development industry, and communicating the value of brownfields. According to Meyer and Lyons (2000), policy cannot address the lack of expertise and experience in brownfield redevelopment. Beyond providing financial assistance, governments can do little to enhance the appeal of brownfield sites. Even in terms of funding, only a limited financial assistance can be provided by municipalities due largely to multiple competitions on their limited financial resources. Despite their limited financial resources, municipalities can foster local support by creating a common vision for an area and can create a demand for reusing sites by helping the public understand the benefits of using brownfield sites. When the demand exists for using brownfield sites for residential or commercial use, the development community will shift its focus to meet the demand.

In areas where urban living is becoming more popular, the demand for urban residences increases. Therefore, municipalities can create a demand for brownfield redevelopment by promoting the attractiveness of urban residency. Through a combination of policy initiatives and development campaigns, the municipalities can limit the allure of suburban locations while simultaneously increasing the attractiveness of urban living through

significant investment in reurbanisation. Investments in the infrastructure of the inner city will prompt retail and service-oriented businesses to locate in these areas. In this way, municipalities can generate a demand for downtown living; once the issue of demand is addressed, the development industry will provide opportunities for this type of living.

Additionally, the Ontario Ministry of Environment views brownfield redevelopment as an opportunity to clean up contamination; in contrast, London and other municipalities implement brownfield redevelopment programmes to induce economic activity. This gap needs to be addressed through a cooperative effort among all levels of government to develop and implement an integrated strategic redevelopment programme. The easier it is for property owners and developers to receive necessary approvals, the more attractive a brownfield is for redevelopment.

To simplify the process, and thereby reduce the time component, prevent complications, and prevent misunderstanding, municipalities can create a task force charged with the purpose of streamlining and standardising the redevelopment application process. This group would receive all brownfield proposals and assess the merits of each application relative to the broader community goals and planning principles. With such a task force in place, municipalities will eliminate the bureaucratic process of having the application circulated to various departments at city halls.

This group can also ensure that public funds are not spent on sites that are likely candidates for private action, meaning sites that do not require public intervention. With eligibility requirements that reduce the likelihood that those public funds will be used for unnecessary interventions, municipalities can, instead, focus funds on redeveloping the least marketable sites, i.e. sites with low demand for redevelopment, in ways that meet the needs of the community where the site is located.

Finally, the London Brownfield CIP stipulates that each application will be reviewed based upon its contributions to the greater good of the city. The downside of this approach is that only the largest and most contaminated sites are likely to be developed. The implicit logic here is that little will be done for smaller, more scattered sites, such as abandoned, old automobile service stations, machine shops, dry-cleaners, and fuel stations. These abandoned smaller sites provide opportunities for local entrepreneurs to reinvest in their neighbourhoods. Consequently, rather than funnelling funds into the larger, more contaminated sites, the City of London as well as municipalities with a similar stipulation can support their communities by funding redevelopment of these smaller locations through strategic neighbourhood revitalisation campaigns. To be successful, municipalities will need to work closely with local communities, entrepreneurs, and economic development organisations.

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