The Effects of Development Charges on Urban Form

Final Report

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Executive Summary

The purpose of this was to conduct a nation-wide survey of builders and developers to determine the effects of development charges on industry decisions related to residential densities, location and timing. Case studies in selected cities explore in more detail how specific development charge regimes are affecting residential development patterns.

This report looks at the effects of development charges (dc's) on industry decisions related to residential densities, location and timing. The first phase of the work consists of a survey of 1,214 builders and developers; 265 responses were submitted (22%), representing firms ranging in size from 5 to 60 employees. All of the firms are located in urban regions consisting of more than one municipality. Some of the results are presented below.

- Most of the respondents (86%) indicated that differences in development charge fees among the municipalities in their respective urban regions have at least some impact on their regional locational decisions; 32% indicated a major impact.
- Slightly more than 17% of respondents said that they always locate in municipalities with lower dc's, while 69% said that they sometimes favour areas with lower dc's.
- When locating *within* a municipality where dc's vary by location, 64% of respondents said that "area-specific" charges have a "major" or "medium" impact on their locational decisions; of these, 20.5% "always" located in lower-charge areas, while 63.6% "sometimes" located in lower-charge areas.
- A majority of respondents (54.5%) thought that development charges have a "major" or "medium" impact on their decisions related to lot sizes; of these, 56.5% thought that they tended to decrease lot sizes.
- 31.4% of respondents felt that the dc's in their respective municipalities favour detached houses; 24.4% said they favour attached houses; 18.6% said multiples; 14.0 thought they encourage a mix of houses; and the rest didn't know

Résumé

L'objectif consistait à mener une enquête pancanadienne auprès des constructeurs et des promoteurs dans le but de déterminer les effets des charges d'aménagement sur les décisions de l'industrie d'aller de l'avant selon la densité, l'endroit et le choix du moment opportun. Des études de cas effectuées dans certaines villes sondent de façon plus approfondie comment des barèmes précis de charges d'aménagement influent sur les aménagements résidentiels.

Le présent rapport envisage les effets des charges d'aménagement sur les décisions de l'industrie d'aller de l'avant selon la densité, l'endroit et le choix du moment opportun. La première phase du travail consistait à mener une enquête auprès de 1 214 constructeurs et promoteurs; 265 réponses ont été présentées (22 %), représentant des entreprises dont la taille variait entre 5 et 60 employés. Toutes les entreprises sont situées dans des régions urbaines comptant plus d'une municipalité. Certains résultats sont présentés ci-dessous :

- La plupart des répondants (86 %) ont indiqué que les différences des charges d'aménagement parmi les municipalités de leur région urbaine respective exerçaient au moins une incidence quelconque sur les décisions d'aménager un secteur de leur région; 32 % ont indiqué qu'elles avaient une importante influence.
- Un peu plus de 17 % des répondants ont indiqué qu'ils choisissaient toujours des municipalités où les charges d'aménagement étaient faibles, alors que 69 % ont fait valoir qu'ils préféraient parfois des endroits soumis à des charges d'aménagement moins élevées.
- Au moment d'aménager un secteur *dans les limites* d'une municipalité, là où les charges d'aménagement varient en fonction de l'endroit, 64 % des répondants ont affirmé que les charges « propres à un endroit » avaient une incidence « majeure » ou « moyenne » sur leur décision d'aménager un endroit en particulier; de ce pourcentage, 20,5 % choisissaient « toujours » un endroit soumis à des charges moins élevées, alors que 63,6 % choisissaient « parfois » des endroits frappés de charges moins élevées.
- Une majorité de répondants (54,5 %) estimaient que les charges d'aménagement exerçaient une incidence « majeure » ou « moyenne » sur leurs décisions liées aux dimensions des terrains; de ce pourcentage, 56,5 % ont indiqué que les charges d'aménagement avaient généralement pour effet de réduire les dimensions des terrains.
- Parmi les répondants, 31,4 % ont exprimé l'avis que les charges d'aménagement imposées par leur municipalité respective favorisaient la construction de maisons individuelles; 24,4 % les maisons jumelées ou en bande; 18,6 % les collectifs d'habitation; 14,0 % l'aménagement mixte de maisons; et les autres ne le savaient pas.

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1.0 Introduction

Municipalities in Canada are finding it increasingly difficult to finance growth-related infrastructure. On the one hand, provincial governments are transferring greater responsibility for infrastructure provision to municipalities, but these responsibilities are generally not being accompanied by increased transfer payments. On the other hand, rate-payers are not willing to tolerate increased property taxes. The situation is forcing municipal governments to increase their use of alternative revenue sources, such as user fees, public-private partnerships, and development charges.

This study focuses on one particular infrastructure financing tool -- development charges (dc's) -- and the resulting impacts of this tool on urban form. It examines the relationship between the structure of development charge regimes and private sector development decisions related to the timing of residential development, residential densities, location, and land use mix. The study will attempt to determine whether current development charge regimes are influencing developer decisions in such a way that negatively affects the (infrastructure) cost-effectiveness of residential development patterns.

Methodology

To date, most of the studies on the relationship between municipal financing techniques and land use have been theoretical in nature. They point out, for example, that if the taxes and levies charged to a development are equal to (or closely reflect) the cost of the public services accruing to that development, then the financing techniques will have no effect on development decisions related to density, location, and so on. In other words, the financing techniques will be neutral and there will be an efficient "allocation of resources" in the development process. Where taxes and levies do not reflect benefits received, then the market will be distorted, providing incentives and disincentives with respect to location and density. Most of this work has been based primarily on costing theory. This study attempts to verify the theory empirically. The project consists of:

- a literature review to further elaborate the theoretical links between development charges and urban form;
- a mail out survey of builders and developers to determine the importance of development charges when making development decisions related to density, timing, location and land use mix; and
- and a set detailed case studies, based on the results of the survey, to further explore the relationship between development charges and residential development patterns.

2.0 Literature Review

The literature review reveals that, with a few important exceptions, very little work has been conducted on the subject of development charges and urban form. As mentioned above, most of what exists is theoretical in nature. This may reflect the fact that development charges are widely viewed primarily as an infrastructure financing tool. They are rarely viewed as a planning tool.

The literature that does exist tends to focus on key questions such as:

(i) the mechanisms through which development charges may have an impact on urban form;

(ii) how development charges should be structured to maximize land use efficiency; and

(iii) the state of the debate on the use of development charges as planning tools to influence growth and development.

The literature addressing these questions is briefly reviewed below. The review is intended to be objective and impartial. No attempt is made to qualify or critique the findings, which, as mentioned above, are largely based on theoretical studies.

2.1 The mechanisms through which development charges may have an impact on density and locational decisions

Development charges can affect urban development and urban form in two ways:

(i) as prices (or pricing signals, influencing production and consumption in the residential sector); and

(ii) as sources of revenue (which can influence government and public support or opposition to proposed developments).

Development Charges as Pricing Signals:
Some argue that development charges have little impact on housing markets because most or all of the charge is eventually capitalized back into the price of land (Delafons, 1990). Others argue that some of the cost of the levy will be shifted forward to housing consumers, either sometime after the introduction of the charge (Goodchild, Booth, and Henneberry,1996), or in the longer-term (Amborski, 1988). The portion of the charge that is shifted forward depends on a number of factors, including the elasticity of housing supply and demand, changes in development charge levels over time, and the geographic coverage of the charge (Amborski, 1988a; Skaburskis, 1990; Skaburskis and Quadeer, 1992).

Impact on Housing Densities: In theory, if development charges affect housing prices, then consumer housing choices should change, which should in turn affect developers' decisions about what to build and where. The literature on the relationship between

development charges, house prices, consumer housing choices and development densities, however, is sparse and inconsistent:

- In Loveland, Colorado, Singelland Lillydahl (1990) showed that lot sizes decreased by about 10 percent following a substantial increase in impact fees.
- In Ontario, however, a study by Sedley Associates Inc.(1986) found that lot sizes and other housing characteristics were mainly a function of market demand and were not affected by municipal lot levies.
- A recently completed CMHC study (Skaburskis, 1999) concludes that development charges affect housing densities in two ways: (i) by discouraging homeownership (thereby keeping more of the market in higher density rental units); and (ii) by encouraging prospective home buyers (both homeowners and renters) to move into higher density town houses, rather than detached houses.
- Anecdotal evidence collected from developers in Ottawa and Toronto suggests that the impact of development charges on lot sizes depends on local factors. In the Toronto region, respondents to a survey claimed that development charges increased lot sizes, whereas the opposite was true in Ottawa (Skaburskis and Tomalty, submitted). In Toronto, the responding developers explained that development charges constitute a relatively high proportion of the selling price of higher density housing. Since the revenue potential of land is based on saleable front footage, increasing the number of lots in a tract can increase development charges faster than net revenues. Thus, the development charge regime in the Toronto area led developers to favour fewer, larger lots. In Ottawa, on the other hand, relatively higher development charges for single family housing causes consumers to shift their demand towards smaller attached units. The authors of the study conclude that development charges in Ottawa do not constitute as high a proportion of the final selling price of higher density housing as they do in Toronto. The findings suggest that the structure of development charges (i.e. the differentiation of charges by unit type) has a dual impact, not only affecting what consumers can afford to buy, but what developers prefer to build.

Impact on Location: The literature on the relationship between development charges and locational decisions is also very sparse. Slack (1993) notes that in theory, however, the relationship depends on whether the levy is based on an "average" or a "marginal" cost approach. The former applies an average, uniform levy to all developments in a given area regardless of actual servicing costs, while the latter calculates actual costs and adjusts levies for different developments accordingly. Under a marginal cost approach, developers have some incentive to favour locations that are cheaper to service. Under an average cost approach, this incentive is eliminated. In fact, the average, uniform charge can result in subsidies flowing from areas that are less expensive to service to areas that are more expensive to service.

Impact on Timing: The potential impact of development charges on the timing of development is also based primarily on theory. The theory assumes that in a growing city, vacant land on the urban fringe rises in value as the demand for housing rises. Development charges increase the cost of construction, however, encouraging developers

to delay development until prices rise enough to cover costs (Skaburskis and Quadeer,1992). Over time, it is assumed that the delay may have the effect of increasing the proposed density of the project (Peiser,1984).

Development Charges as Sources of Revenue:
As sources of revenue, development charges can also affect urban form outcomes through their impact on the political climate surrounding community growth and development. This includes potential impacts on the planning approvals process, on the community's overall acceptance of proposed projects, and on the timing of required infrastructure expansion.

Kaiser and Burby (1988) point out that development charges can create a development process in which developers' willingness to pay the costs of new infrastructure and impact mitigation gives them considerable control over the character, location and density of development. By effectively purchasing the necessary growth-related infrastructure, developers eliminate many of the municipal financial constraints to development. This can help speed up the development process by reducing public opposition and municipal concerns over the source of funds to pay for services.

Slack (1994) notes that the impact of development charges on the timing of development may depend on whether an average or marginal cost approach is being used in the municipality. In theory, when a marginal cost approach is used, the charges collected from a development are equal to the costs of expanding the infrastructure to service that development and the municipality has sufficient revenue to proceed. When an average cost approach is used, however, the revenue flowing from a development may be lower than the cost of developing the supporting infrastructure and the development may be delayed until the municipality can obtain the funds from other charges, assessments or borrowings.

2.2 The state of the debate on how development charge regimes should be structured to maximize financial objectives, equity objectives, and planning objectives

As noted above, a key issue to be addressed in the design of a development charge regime is the choice between an average-, or a marginal-cost approach. The different approaches have different strengths and weaknesses based on four criteria developed by Snyder and Stegman (1986) for evaluating infrastructure financing methods: equity; efficiency; administrative considerations; and public acceptability.

An average cost approach would typically see development charges assigned on a municipality-wide basis by unit type. The projected infrastructure costs are spread out over all anticipated development within the municipality. Different projects containing the same types of units would pay the same charges, regardless of their location within the municipality and actual servicing costs. A development charge for sewers, for example, would levy the same fee on a single family home 10 kms from the treatment plant as a single family home right beside the plant.

A marginal-cost approach is a more site-specific development charge regime based on estimating the actual cost of servicing a particular development. Under this approach, sites that are more expensive to service due to topography, or location relative to major facilities, pay higher fees. Sites where infrastructure can be provided more efficiently, pay lower fees.

The main strength of the average-cost, municipality-wide approach is its administrative simplicity (Slack,1993). Charges are easily calculated from municipal-wide capital plans and growth forecasts. Furthermore, the system provides maximum flexibility in that collected funds can be shifted to different projects within the municipality as actual development patterns (which tend to differ from those foreseen in official plans and capital spending plans) unfold over time. Finally, because it is based on a straightforward methodology, it is easily defensible before the courts and administrative tribunals.

The average-cost, municipality-wide approach also has some virtue from an equity point of view. By calculating the global needs of the municipality to support growth in the long-term, the method ensures that that future taxpayers will not be burdened with unforeseen service demands. A marginal-cost, site-specific approach is thought to be more prone to changes in development trends and more likely to leave the municipality with a shortfall, passing the cost of present development onto future generations.

A further advantage of the average-cost, municipality-wide approach is that it is generally unopposed by key interest groups. Existing residents like it because it is designed to cover the total municipal costs of growth and places the responsibility for paying for new infrastructure on developers and new-comers. Local politicians like it because it spares them the unpleasant task of discriminating among residents by charging higher levies in certain parts of the municipality for higher growth-related costs that are often beyond anyone's control (due to terrain and drainage problems, for example) (Blewett and Nelson, 1988). Tomalty and Skaburskis (1997) have noted that there is a lack of political support for a marginal-cost approach among municipal and provincial officials.

Despite its virtues, however, the average-cost, municipality-wide approach is often viewed as a compromise between the need for administrative simplicity and the need to promote land use efficiency. The marginal-cost, site-specific approach is considered to be more effective from this perspective. By charging developers different prices based on the actual burden they impose on the public purse, the site-specific approach ensures that those who benefit pay for the service. By more accurately reflecting the marginal cost of land development, the site-specific approach sends the right pricing signals to developers who are then provided with a market-based incentive to develop in locations that are less expensive to service. In contrast, the municipal-wide approach spreads the charges over all new residents in a way that ignores the distribution of costs and benefits. In economic theory, this results in an inefficient allocation of resources.

Some public finance economists have suggested a combination of the two aproaches where development charges for hard infrastructure such as sewers and water would be

based on a two-part payment, one location sensitive and the other not. The first part, a charge for above ground infrastructure such as treatment facilities, would be a flat fee per house since the cost of accommodating another connection is the same regardless of location. The second part would be a variable fee based on the cost of extending underground infrastructure such as water and sewer. The longer the pipe lines, the higher the charge (Bird and Slack, 1993; Blewett and Nelson, 1988).

A similar argument is made with respect to density. Support in the literature for a marginal-costing approach to density varies with the type of infrastructure being discussed. Support is weak for a density-sensitive approach to financing soft infrastructure. This flows from the fact that few observers believe that higher density developments result in lower infrastructure costs for services such as fire, police and schooling. In fact, the opposite is frequently argued: because higher density dwellings have less private space (both interior and exterior), its occupants are more likely to make use of municipal facilities such as recreational areas, libraries and so on. As with location, it is also widely accepted that the cost of facilities such as sewage treatment plants are determined by population size and are independent of density considerations (Blewett and Nelson, 1988).

Support for a marginal approach that is sensitive to density factors seems to be strongest when dealing with linear infrastructure. This is based on the assumed inverse correlation between the density of development and the amount of linear infrastructure required to support it. Numerous studies have made this point in recent years.

Skaburskis (1993) goes one step further, suggesting that only the distribution systems of hard services (eg. water, sewer, roads) with local benefits should be included in development cost charges. Major treatment plants and off-site parks, for example, should be excluded because they are necessitated by population growth rather than by development characteristics. Development charges on these services therefore, amounts to a "tax on growth" and is not justifiable on efficiency grounds.

In determining what should be included in the costing of development charges, Tassonyi (1997) favours the "expansion test", which says that if a property is developed and begins paying normal property taxes, and the general tax rate in the municipality does not increase as a result of the development, then extra costs are not being imposed on the existing ratepayers and a development charge is not justified.

Area Specific Charges:

Skaburskis (1993) has proposed a blending of average- and marginal-cost approaches that incorporates the strengths of both. By charging what he calls the "long-run marginal cost" of services, the practical problems of a marginal cost approach can be neutralized by distributing the cost of servicing a large planning district evenly across all the development projects that are expected to take place within it over a specified period of time.

This approach is embodied in some Canadian municipalities that have created "area-specific" development charges (or a mix of municipality-wide charges for soft infrastructure and area-specific charges for hard infrastructure). For example, two municipalities within the GTA have adopted area-specific approaches: Richmond Hill and Vaughan. Although not specifically designed to capture locational impacts on development charge rates, these municipalities do vary the charges levied on distributional infrastructure according to the cost of supplying that infrastructure in various areas of the municipalities. In Alberta, Calgary uses a mix of municipality-wide and area-specific charges.

A survey of the use of impact fees in the U.S. found that when it comes to varying the fee by location in order to reflect spatial variations in the cost of providing facilities, less than 3 percent of sewer impact fees and 5 percent of fire impact fees varied by location. According to the authors, "the absence of spatial variation in the impact fee is disappointing because it means that the beneficial effects of impact fees as spatial prices are forfeited and the impact fee cannot operate to discourage development at locations that are expensive to serve" (Frank and Downing, 1988: 13).

Because the area-specific approach levies different amounts on different areas of the municipality depending on the cost of servicing that area, it has the potential to approximate a marginal cost approach. For instance, an area-specific development charge may reflect cost differences attributable to the distance of the development area from major facilities. Development areas far enough from a water treatment plant that they require an additional pumping station, will be charged at a higher rate than an otherwise similar area near major facilities. Furthermore, area-specific charges could be used to reflect infrastructure savings from infill or nodal development by discounting charges on growth in designated areas. Finally, in contrast to a municipality-wide structure, service standards may be set on an area-by-area basis and therefore may potentially reflect the different levels of efficiency (such as per household water use, trip generation by car, waste generation) associated with various development patterns.

Thus, an area-specific approach can approximate a site-specific marginal cost approach. Not surprisingly, this implies certain trade-offs, especially in its administration. Compared to the municipality-wide method, the area-specific approach is seen by municipal officials as administratively cumbersome because it requires more elaborate studies to forecast population growth and capital needs for a variety of smaller areas. The smaller area means that capital planning is more sensitive to deviations from planning and engineering assumptions as the area is built out. It also requires a more complicated accounting system to keep the reserve funds for the various development charge areas separate when in fact there is always a little "bleed" of benefits across area boundaries (Tomalty and Skaburskis, 1997).

Formulaic vs. Negotiated Charges:

The debate over average versus marginal cost approaches to development charges is related to another issue not yet raised: the difference between formulaic and negotiated

development charges. It is sometimes assumed that a marginal cost, site-specific approach requires that a developer negotiate with municipal officials about the anticipated impact of his or her project on the demand for new infrastructure. This is relevant because negotiated charges are assumed to be more administratively cumbersome than formulaic charges and because they are thought to result in underpricing of infrastructure and inequities in the distribution of costs.

In his survey of lot levies in the Toronto area, for example, Amborski (Amborski, 1988a) found that with each new subdivision development, lengthy negotiations between the city and the developer took place to determine the lot levies. The result was that the most experienced and forceful bargainer obtained the best deal from Council in process that was viewed as unfair and probably economically unsound to the Corporation. Not surprisingly, municipalities report that when they move from negotiated to formulaic exactions, their revenue increases substantially. In the town of Chesterton, Indiana, for example, researchers reported that revenues increased by 50 percent by switching from negotiated to formulaic charges (Eckenstahler and Cole,1994).

There is no reason to assume, however, that marginal cost approaches need to be negotiated on a project-by-project basis. As mentioned above, location attributes can be taken into account by establishing service districts and density factors can be reflected in development charge formulae by differentiating units according to square footage. The point here is that the choice of formulaic versus negotiated development charges should be considered independently from the choice between average cost versus marginal cost approaches.

Geographic Scope of Development Charges:
Finally, many urban regions represent a single housing and property market, but have development charge regimes that vary from municipality to municipality within the region. Municipalities may compete with each other, lowering development charges to attract desirable development, or they may increase development charges to discourage "undesirable" development.

As Blais (Blais, 1995) points out with respect to the Toronto region, the patch-work of development charge systems "creates bias, distortion and market inefficiencies.... The same development charge structure should be adopted across the region... This structure would reflect the true costs of development for a standard list of items associated with development at different densities and in different locations within the GTA. The development charge should therefore be assessed at a fairly local scale, such as the local municipal level or other suitable development charge assessment area (51-52)."

This section of the litereature review concludes with the following two points:

1) As mentioned above, designing a development charge regime may involve choosing among competing principles of equity, efficiency, administrative simplicity, and political acceptability. While the above review focuses primarily on the land use efficiency component of the debate, there is no consensus among those interested in development charges that this or any of the other principles is of primary importance.

2) Much of this section on the structuring of development charge regimes is based on the theoretical assumption that marginal cost pricing results in a more efficient "allocation of resources"; in other words, more efficient decision-making with respect to residential densities, location and other land use determinants. As mentioned above, the empirical evidence supporting this theory is surprisingly thin.

2.3 The state of the debate on whether development charges should be used to achieve planning objectives.

Having begun as a minority tradition in the planning literature around the middle of the century, the vision of a more compact city has emerged as a significant planning paradigm in Canada and abroad. In Canada, numerous research, planning and policy reports from all levels of government, as well as from industry and professional associations, are advocating more density and compactness to varying degrees.

At the provincial level, ministries of municipal affairs and housing in British Columbia, Ontario, and Quebec have adopted positions, policies, or legislation in favour of more compact urban forms (Tomalty,1997). At the local level, a survey of planning officials in urban areas across the country conducted by Isin and Tomalty (1993) revealed that two-thirds of respondents were willing to say that they personally supported intensification as a policy goal in their municipalities. Less than 14 percent were opposed.

The growing support among academics, planners and politicians for more compact urban form has prompted a more critical look at the causes of sprawl, as well as an examination of public policies and legislation that would encourage rather than discourage efficient development patterns. The role of development charges, other levies and fees, property taxes, and traditional zoning practices have all been part of this analysis -- as has the role of local government itself. To paraphrase Nowlan (1993: 830):

> On the one hand, if municipalities are merely administratively convenient ways of delivering infrastructure and services that, in effect, have been established by custom or provincial fiat, then there is little point in discussing the efficiency of local taxes [and levies]. If, by contrast, local governments are envisaged as more active and independent levels of government with responsibility for service provision that could vary substantially from place to place, and with authority to guide the development of urban form, then we are likely to want a flexible local tax

> [and levy] structure, one that will permit costs to be targeted more closely to those who benefit and one that will allow municipalities to provide the appropriate encouragement for desired development.

As provincial governments continue to download responsibilities to the local level without supporting funds, the more activist role of local governments is likely to increase in coming years. This will continue to encourage a more comprehensive appproach to urban growth and development involving regulatory controls as well as market-based incentives. The most appropriate mix of regulations (official plans, zoning, etc.) and pricing policies (taxes, levies, fees, etc.) is as yet unknown. Flowers (1996: 16) notes that regulatory controls tend to be costly to implement. In contrast, properly structured taxes, levies and fees let the market operate, providing pricing signals to builders, developers and consumers. As mentioned in the previous section, however, there is some debate about the extent to which pricing signals alone will result in the efficient allocation of resources espoused by pricing theory.

While there is still some debate on the extent to which taxes and levies should be used as planning tools, and their appropriate mix with regulatory controls is still being explored, there is an emerging consensus that, at a minimum, these two strategies must be complementary. As Slack (1994) notes:

> While development charges do have land-use impacts, it is not clear that they should be used as a tool to achieve land-use objectives. Revenue policy generally is a blunt instrument for achieving land-use objectives ... setting the appropriate magnitude of the charge to result in a specific land-use pattern can be extremely difficult.
>
> While it is probably difficult to use development charges to encourage higher densities and discourage urban sprawl, development charges should not do the reverse. Development charges should be designed to be neutral with respect to land-use decisions - they should reflect the true costs of specific types of development and specific locations. If they do, the resulting land use decisions will be efficient (48-49).

With this assessment, the philosophy of more closely intergrating development charge regimes with planning policy is increasingly being found in municipal practice:

- In the US, for example, state legislation enabling development exactions usually tie such exactions to comprehensive planning (Amborski et al., 1987). A capital plan is required by some states as part of the state-mandated growth management function of the municipality. Development charges are often cited in capital plans as a means of meeting capital plan objectives and are linked to community plans (Kaiser and Burby, 1988).

- In Halifax, municipal officials are advocating a development charge system that would: " ... be a planning instrument related to overall growth management. Evaluation would assess the impact of alternative development charge pricing schemes on urban form" (Regional Municipality of Halifax, 1998: unpaginated).

- In BC, the Province's Development Cost Charges (DCC) Best Practices Guide (British Columbia Ministry of Municipal Affairs and Housing, 1997) states:

  > A DCC program is subordinate to broader goals of the public and therefore, should reflect other initiatives, such as the growth strategy goals set out in the Municipal Act, regional growth strategies, and municipal Official Community Plans. The charges are only one element of a municipality's approach in dealing with issues of land use efficiency, housing affordability and community sustainability.

As this closer integration between development charges and land use continues to unfold, there are those who are arguing for an even more activist role for development charges as a tool to promote social and environmental goals. For example, cases are being made that development charges should be used to pay for economic externalities, such as air and water pollution, and for other social impacts related to urban development. The notion of charging for these impacts goes back to the work of Pigou (1920), who argued that the full costs, including the environmental costs of any activity should be reflected in the prices charged. With such a regime in place, "residents and firms in an urban area would fully appreciate the full costs of their activities and thus consumption of the environment would be at an optimum level" (Button and Pearce, 1989: 159).

According to Kaiser and Burby (1988: 117):

> Exactions that overemphasize the fiscal objective render vulnerable much less tangible values as the quality of the built and natural environments and community character to whatever development forms are profitable once the costs of water, sewers, and roads are included.

To date, the most common form of municipal pricing to achieve social and environmental objectives is to exempt or discount residential development charges in inner city areas. The typical planning motivation is to attract new development to the downtown area in order to stem the cycle of inner city decline. Efficiencies can be gained in terms of publicly funded infrastructure (where there is excess capacity in good repair), but other gains are also anticipated, including a reduction in vehicular traffic, air pollution, and agricultural land consumption (Hoxworth, 1991).

3.0 Survey of Developers and Builders in Four Urban Regions

In order to assess the impact of development charge regimes on density, location and timing decisions, a mail out survey of developers and builders was conducted in the following four urban regions:

Urban Region	Surveys Sent Out
Vancouver	320
Calgary	263
Saskatoon	38
Toronto	548
Total	1170

The first part of the survey asked the respondent to identify the types of residential development activity they were involved in, their firm size, level of residential development activity, and the municipality within the urban region where they are most active. The questions in the second part of the survey referred to the impact of development charges on their development decisions in this "reference municipality".

Of the 1,170 surveys mailed out, a total of 264 responses were received, for a response rate of 22.6%. Of these responses, 128 were in the form of completed questionnaires. The remainder were not filled out for the reasons that appear in Table 1. While all recipients of the survey were developers of some kind, for example, as can be seen, some of the respondents (18.2%), were not active in the residential sector.

Table 1: Response Rates

Response Type	Number of Responses	Percent
Filled out questionnaire	128	48.5
Not a residential builder or developer	48	18.2
Not active in study region	13	5.0
Active in study region but not in a municipality with development charges	34	12.9
Active in study region but don't know if active in a municipality with development charges	15	5.7
Declined/not interested	26	9.8
Total	264	100

Part I of the Survey: Profile of Respondents

Study Region: Responses were received from each of the study regions roughly in proportion to the number of surveys sent out to each region. Although 128 completed questionnaires were submitted, Tables 3-7, show that the response rates varied somewhat for the following five questions related to the characteristics of the responding firm and the nature of their development activity.

Table 2: Responding Firms by Study Regions

Study Region	Vancouver	Calgary	Saskatoon	Toronto	Total
Number	48	17	3	60	128
Percent	37.5	13.3	2.3	46.9	100

Firm Type: Of the 124 respondents who indicated their type of firm, 16.1% were residential developers, 4% were residential builders, and almost 80% were both residential developers and builders.

Table 3: Responding Firms by Type of Firm

Firm Type	Developers	Builders	Both	Total
Calgary	2	3	9	14
Saskatoon	0	1	2	3
Toronto	6	1	53	60
Vancouver	12	0	35	47
Number	20	5	99	124
Percent	16.1	4.0	79.8	100

Development Type: Of the 125 respondents who indicated the types of residential development they were engaged in, 73.6% were involved in urban development while 56.8% were involved in greenfield (suburban) development. Only 20% of respondents were involved in rural development and 3.2% were involved in forms of development that did not fit these categories, e.g., resort development. Just under half (60) of the respondents were engaged in more than one form of development activity.

Table 4: Responding Firms by Type of Development

Type of Development	Greenfield	Urban	Rural	Other	Total
Calgary	14	5	3	1	23
Saskatoon	1	2	0	0	3
Toronto	32	44	15	1	92
Vancouver	24	41	7	2	74
Number	71	92	25	4	192*
Percent	56.8	73.6	20.0	3.2	

* Adds up to more than 125 responses because some respondents chose more than one category.

Product Type: A large majority (82%) of the firms surveyed were involved in the creation of detached dwellings while 71.9% were involved in producing semi-detached dwellings or townhouses. Over one-third (35.9%) of respondents were involved in the production of low-rise apartments and over one quarter (25.8%) were engaged in the development or building of high-rise apartments. Over one-quarter of respondents were active in mixed-use development and 15.6% were involved in non-residential as well as residential development.

Table 5: Responding Firms by Product Type

Product Type	Singles	Semis/ Towns	Apts-Low	Apts-High	Non-res	Mixed
Percent	82.0	71.9	35.9	25.8	15.6	25.8

Size:

Nearly 37% of the respondents were from small-size firms with 5 employees or fewer. A further 26% were from firms only slightly larger in size for a total of 63% of respondents from firms with ten or fewer employees. Only 3% were larger than 60 employees.

Table 6: Responding Firms by Size in Number of Employees

Firm Size (Employees)	0-5	6-10	11-15	16-20	21-30	31-40	41-50	51-60	>60	Total
Number	45	31	11	9	9	4	5	3	4	121
Percent	36.5	26.4	9.6	6.6	7.1	3.6	4.1	2.5	3.6	100

Almost half (48%) of the responding firms built less than 100 units last year.

Table 7: Responding Firms by Size in Units Built Last Year

Firm Size (Units)	0-25	26-50	51-100	101-200	201-300	>300	Total
Number	22	23	15	25	19	21	125
Percent	18	18	12	20	15	17	100

Part II of the Survey: The Impacts of Development Charges

In the second section of the survey, respondents were asked to respond to detailed questions about the impacts of development charges on their development decisions. Recognizing that development charges are one of many variables affecting development decisions, respondents were also asked to rank the importance of dc's relative to other factors.

Table 8: Relative Importance of Development Charges

Importance/ Factor	Very Important	Important	Minor Importance	Not Important	Total
Site Characteristics	71.8	21.8	5.6	0.8	100
Familiarity with Jurisdiction	17.2	47.5	28.7	6.6	100
Complexity of Regulatory Framework	31.5	46.0	19.4	3.2	100
Local Market Conditions	76.4	17.9	4.1	1.6	100
Property Taxes	7.3	23.6	51.2	17.9	100
Development Charges	31.1	47.5	18.9	2.5	100

As Table 8 shows, although development charges are not considered as important as site characteristics and local market conditions in determining the location, density and timing of development, they are, nevertheless, relatively important variables in the industry's decision-making process. Nearly 79% of respondents indicted that d.c.'s were either "important" or "very important".

Impacts on Density of Development

The first dimension explored by the questionnaire was the impact of development charges on the density of development within the reference municipality. Respondents were asked to judge the degree of impact and the effect of development charges on three indicators of density: lot sizes (for ground-related developments); housing mix; and unit sizes. Not all of these components of density were relevant to all respondents. For instance, the lot size questions were not applicable to developers and builders involved only in apartments and housing mix was not applicable to firms doing only one type of housing for reasons not associated with development charges. This partially explains the varying response rates for the following questions.

Do Development Charges Affect Lot Sizes?

Development charges may affect lot sizes through price effects (if development charges increase the overall price of housing, they may reduce the size of lot the average buyer can afford) or by subsidy effects (if development charges are not sensitive to lot size, then large lots may be subsidized by smaller lots, possibly leading developers to favour the former).

Out of 123 responses to this question, 54.5% reported that development charges had either a major or medium impact on their development decisions related to lot sizes; 23.6% thought they had only a minor impact. Only 17.9% thought development charges had no impact on lot sizes and 4.1% did not know.

Table 9: Impact of Development Charges on Decision-Making Related to Lot Size

Impact	Major	Medium	Minor	No Impact	Don't Know	Total
Calgary	4	7	2	3	0	16
Saskatoon	0	2	0	1	0	3
Toronto	14	16	17	10	2	59
Vancouver	13	11	10	8	3	45
Number	31	36	29	22	5	123
Percent	25.2	29.3	23.6	17.9	4.1	100

Of those who believed that development charges had some effect on their decision-making related lot sizes, over 56% believed that they tended to decrease lot sizes; approximately 28% believed development charges were working to increase lot sizes; and just over 15% did not know what the effect was.

Table 10: Impact on Lot Size

Effect	Increase	Decrease	Don't Know	Total
Calgary	1	10	1	12
Saskatoon	0	2	0	2
Toronto	12	23	9	44
Vancouver	13	17	4	34
Number	26	52	14	92
Percent	28.3	56.5	15.2	100

Do Development Charges Affect the Mix of Housing Units?

Both the price and subsidy effects of development charges may influence developer decisions on the mix of housing units in their proposed developments. Through the price effect, higher priced housing may cause some buyers or renters to steer away from more expensive detached housing and to switch to less expensive semis, towns, or apartments. Through the subsidy effect, if development charges are not structured to reflect the different infrastructure costs associated with different housing types, houses that are less expensive to service may inadvertently be subsidizing houses that are more expensive to service.

Out of 126 responses to this question, more than half (52.4%) thought that development charges had a major or medium impact on their decisions related to the mix of housing in their development projects; 18.3% thought any impacts were minor; and over one quarter (25.4%) thought that levies had no impact at all on housing mix.

Table 11: Impact of Development Charges on Decision-Making Related to Housing Mix

Impact	Major	Medium	Minor	No Impact	Don't Know	Total
Calgary	2	7	1	6	0	16
Saskatoon	0	1	1	1	0	3
Toronto	15	16	11	15	2	59
Vancouver	10	15	10	10	3	48
Number	27	39	23	32	5	126
Percent	21.4	31.0	18.3	25.4	4.0	100

Of the respondents who thought development charges affected their decision-making related to housing mix, the highest percentage believed that they tended to favour detached housing, although substantial numbers believed that attached housing and multiples were favoured (24.4% and 18.6% respectively).

Table 12: Effect of Development Charges on Housing Mix

Effect on Housing Mix	Detached	Attached	Multis	Balance	Don't Know	Total
Calgary	1	4	3	3	1	12
Saskatoon	1	0	0	0	1	2
Toronto	18	10	4	6	4	42
Vancouver	7	7	9	3	9	35
Number	27	21	16	12	15	86
Percent	31.4	24.4	18.6	14.0	17.4	105.8*

* Adds up to over 100% because some respondents chose more than one category.

Do Development Charges Affect Unit Size?

Development charges may also affect the size of units proposed by developers. Again, this may be due to both price and subsidy effects. If development charges increase the price of housing, consumers may move to smaller units within the same housing type. If development charges are calculated on a flat-rate basis within each housing type, smaller units may be subsidizing larger units.

Out of 125 responses to this question, over half thought that development charges had a major or medium impact on their decisions related to unit size. Less than one-fifth thought the impact was minor, although just over one quarter thought there was no impact at all.

Table 13: Impact of Development Charges on Decision-Making Related to Unit Size

Impact on Unit Size	Major	Medium	Minor	No Impact	Don't Know	Total
Calgary	2	6	5	3	0	16
Saskatoon	0	0	2	1	0	3
Toronto	10	21	7	21	0	59
Vancouver	19	10	10	8	0	47
Number	31	37	24	33	0	125
Percent	24.8	29.6	19.2	26.4	0	100

Respondents who believed that development charges had some impact on their decisions related to unit size were divided in their opinions as to whether this led to larger or smaller units. A slightly larger percentage of respondents thought that development charges tend to increase unit size (44.2% versus 40.7%).

Table 14: Impact on Unit Sizes

Effect on Unit Sizes	Increase	Decrease	Don't Know	Total
Calgary	2	8	1	11
Saskatoon	1	1	0	2
Toronto	15	13	6	34
Vancouver	20	13	6	39
Number	38	35	13	86
Percent	44.2	40.7	15.1	100

Impacts on Location Within the Reference Municipality

In the next section of the survey, respondents were asked to consider the impact of development charges on their locational decisions within the municipality in which they operate most (their reference municipality).

Respondents were first asked if the dc's in their reference municipality were "area-specific" or "municipality-wide". Area-specific charges vary by location in a municipality and can influence locational decisions depending on how the charges vary. Sometimes municipalities vary charges to reflect the actual costs of development in certain areas (site-specific, marginal costing), and sometimes they vary to encourage development in certain areas (eg. discounting d.c.'s for downtown development).

Municipal-wide charges do not vary across the municipality and do not tend to influence locational decisions, unless developers perceive that development in some areas is subsidizing development in other areas (in which case developers may tend to avoid the former in favour of the latter).

Respondents were approximately evenly divided on this question with 41% reporting area-specific charges in their référence municipality, and 40.2% reporting municipal-wide

charges. A rather large proportion (18.9%) of the 122 respondents did not know whether development charges varied by location in their reference municipality.

Table 15: Development Charge Structure

Vary by Location?	Vary	Don't Vary	Don't Know	Total
Calgary	11	0	5	16
Saskatoon	0	2	1	3
Toronto	22	23	11	56
Vancouver	17	24	6	47
Number	50	49	23	122
Percent	41.0	40.2	18.9	100

Area-Specific Charges:

Do Area-Specific Development Charges Affect Decision-Making Related to Location Within the Reference Municipality?

Only 10% of the 50 respondents to this question said that development charges had no impact on their locational decisions within their reference municipalities, while 64% said they had either a major or medium impact.

Table 16: Impact on Decision-Making Related to Location

Impact on Location	Major	Medium	Minor	No	Don't Know	Total
Calgary	0	5	5	1	0	11
Saskatoon	0	0	0	0	0	0
Toronto	6	8	4	4	0	22
Vancouver	6	8	3	0	0	17
Number	12	21	12	5	0	50
Percent	24.0	42.0	24.0	10.0	0	100

Of the 50 respondents who attributed a locational impact to development charges within the reference municipality, 44 answered the next question on whether or not they chose locations in areas of the municipality with lower development charges. Almost two-thirds of respondents said they sometimes did this, with another 20.5% saying they always chose such locations. Only 15.9% of respondents said they rarely or never chose low-charge locations for new development projects.

Table 17: Impact on Location

Locate in Lower-Charge Areas?	Always	Sometimes	Rarely	Never	Don't Know	Total
Calgary	0	7	3	0	0	10
Saskatoon	0	0	0	0	0	0
Toronto	5	10	2	0	0	17
Vancouver	4	11	1	1	0	17
Number	9	28	6	1	0	44
Percent	20.5	63.6	13.6	2.3	0	100

As noted above, just under half of the study respondents were engaged in more than one type of development and building activity (i.e., urban, greenfield suburban, or rural development). Respondents in municipalities with area-specific charges were asked whether d.c.'s affected the type of development they undertook (eg. urban, suburban, rural). The purpose of this question was to determine whether the area-specific charges reflected the cost of development in different areas, and whether the variance was significnat enough to influence developers' locational decisions.

The most frequently cited effect was that area-specific development charges caused them to favour locations in the already developed parts of the municipality, with only 30.2% claiming that the structure of development charges in the reference municipality favoured greenfield locations. No one claimed that development charges favoured rural locations. More than a quarter of those responding thought that there was no overall pattern.

Table 18: Impact on Type of Development

Effect on Development Type	Urban	Suburban	Rural	No Pattern	Don't Know	Total
Calgary	2	6	0	2	0	10
Saskatoon	0	0	0	0	0	0
Toronto	7	4	0	6	0	17
Vancouver	10	3	0	3	0	16
Number	19	13	0	11	0	43
Percent	44.2	30.2	0.0	25.6	0	100

Municipal-Wide Charges

Municipal-wide charges do not differentiate fees by geographical location within the municipality. Development charges structured in this way are thought to result in the cross-subsidization of development, with areas that are less expensive to service subsidizing areas that are more expensive to service.

Of the 54 respondents who indicated that their reference municipality applied charges on a municipal-wide basis, 47 answered the next question on whether development charges

were overcharging some areas within the municipality while undercharging others. Almost three-quarters of the respondents (76.6%) believed that municipal-wide levies result in this kind over- and under-charging, while only 17% thought that this was not the case.

Table 19: Do Municipal-Wide Development Charges Overcharge and Undercharge Areas

Under- or Over-Charging?	Yes	Some Extent	No	Don't Know	Total
Calgary	0	0	0	0	0
Saskatoon	1	1	0	0	2
Toronto	9	8	3	1	21
Vancouver	13	4	5	2	24
Number	23	13	8	3	47
Percent	48.9	27.7	17.0	6.4	100

Do Municipal-Wide Development Charges Affect Decision-Making Related to Location Within the Reference Municipality?

Respondents who had indicated that municipal-wide charges were resulting in some over- and under-charging were asked to indicate whether this fact had any effect on their locational decisions. Of these 36 responses to this question, 44.4% reported that they sometimes or always located in areas that were being undercharged, while an equal number reported that they rarely or never did.

Table 20: Effect of Municipal-Wide Development Charges on Decision-Making Related to Location

Locate in Areas being Under-Charged?	Always	Sometimes	Rarely	Never	Don't Know	Total
Calgary	0	0	0	0	0	0
Saskatoon	0	0	1	0	1	2
Toronto	1	7	4	2	2	16
Vancouver	2	6	3	6	1	18
Number	3	13	8	8	4	36
Percent	8.3	36.1	22.2	22.2	11.1	100

Of the 24 respondents who indicated that development charges might have at least some effect on their locational decisions within the reference municipality, 22 answered the subsequent question on whether this effect favoured urban, suburban or rural development. Exactly half the respondents reported that there was no pattern of effect on their location decisions, while 31.8% thought that municipal-wide development charges favoured urban locations and 18.2% believed they favoured suburban locations. No one thought that municipal-wide development charges favoured rural locations.

Table 21: Impact on Type of Development:

Effect on Development Type	Urban	Suburban	Rural	No Pattern	Don't Know	Total
Calgary	0	0	0	0	0	0
Saskatoon	0	1	0	0	0	1
Toronto	6	0	0	4	0	10
Vancouver	1	3	0	7	0	11
Number	7	4	0	11	0	22
Percent	31.8	18.2	0.0	50.0	0	100

Impacts on Location Within the Study Region

The impact of development charges on locational decisions among municipalities in the study regions was also explored in the survey.

In urban regions made up of more than one municipality, development charge regimes are rarely uniform across the region. Municipalities with varying levels of service may charge different rates, or municipalities with similar services may end up competing for development, and lower their rates accordingly.

Do Development Charges Affect Decision-Making Related to Regional Location?
Of the 128 responses to this question, 32% said that varying development charges among municipalities had a major impact on their regional locational decisions; a further 26.6% reported a medium impact, and only 12.5% indicated that there was no impact at all.

Table 22: Impact of Development Charges on Decision-Making Related to Regional Location

Impact on Regional Location	Major	Medium	Minor	No Impact	Don't Know	Total
Calgary	1	7	6	3	0	17
Saskatoon	0	0	1	2	0	3
Toronto	19	12	18	9	2	60
Vancouver	21	15	10	2	0	48
Number	41	34	35	16	2	128
Percent	32.0	26.6	27.3	12.5	1.6	100

The 110 respondents who believed there was at least some impact on their regional locational decisions were asked whether and how often their firms favoured municipalities with lower development charges. Of the 108 responses received to this question, nearly 18% indicated that they always located in municipalities with lower development charges, while nearly 70% indicated that they sometimes favour lower-charge areas.

Table 23: Impact on Regional Location Decisions

Locate in Municipalities with Lower Charges?	Always	Sometimes	Rarely	Never	Don't Know	Total
Calgary	0	9	4	0	0	13
Saskatoon	0	1	0	0	0	1
Toronto	9	37	2	0	0	48
Vancouver	10	28	7	0	1	46
Number	19	75	13	0	1	108
Percent	17.6	69.4	12.0	0	0.9	100

Of the 110 respondents who indicated that development charges have some effect on their locational decisions, 104 answered a subsequent question on whether this effect favoured urban, suburban or rural development. Although 30.8% of respondents reported that there was no pattern of effect on their location decisions, 41.3% thought that differences of development charges among municipalities in the region favoured urban locations and 19.2% believed they favoured suburban locations. Only 5.8% thought that municipal-wide development charges favoured rural locations.

Table 24: Impact of Locational Effects on Type of Development

Effect on Type of Development	Urban	Suburban	Rural	No Pattern	Don't Know	Total
Calgary	2	7	0	3	0	12
Saskatoon	0	0	1	0	0	1
Toronto	18	6	4	17	1	46
Vancouver	23	7	1	12	2	45
Number	43	20	6	32	3	104
Percent	41.3	19.2	5.8	30.8	2.9	100

Impacts on Timing of Development

The final dimension explored by the questionnaire was the potential impact on density of development as a result of development charges' potential impact on the timing of development. As explained above, development charges can either delay or speed up the development process.

Do Development Charges Affect Decision-Making Related to Timing of Development?

Respondents were divided in their opinions on the impact of development charges on the timing of development. Although 48.8% thought development charges had a major or medium impact, the same number thought they had little or no impact.

Table 25: Impact of Development Charges on Decision-Making Related to the Timing of Development

Impact on Timing	Major	Medium	Minor	No Impact	Don't Know	Total
Calgary	0	8	4	3	0	15
Saskatoon	0	0	2	1	0	3
Toronto	11	15	16	16	1	59
Vancouver	16	11	11	8	2	48
Number	27	34	33	28	3	125
Percent	21.6	27.2	26.4	22.4	2.4	100

Respondents were also asked to assess whether the impacts reported in response to the previous question had the effect of delaying or speeding up residential development projects. Of the 91 responses to this question, 47.3% thought that the imposition of development charges tended to delay housing projects while only 38.5% thought they tended to advance them. A substantial minority of 14.3% did not know what the effects on timing were.

Table 26: Impact on Timing

Effects on Timing	Delay	Advance	Don't Know	Total
Calgary	7	2	1	10
Saskatoon	1	0	1	2
Toronto	19	15	7	41
Vancouver	16	18	4	38
Number	43	35	13	91
Percent	47.3	38.5	14.3	100

Respondents who reported that development charges either delayed or advanced projects were asked to assess these effects on the density of projects undertaken in the reference municipality. Although 41% thought that the timing effects did not affect density, the majority of those that did think there was a density effect believed that the tendency was to raise (42.3%) rather than lower (9%) densities.

Table 27: Impacts of Timing on Density

Effect on Density	Raise	Lower	Neither	Don't Know	Total
Calgary	8	1	2	0	11
Saskatoon	1	0	0	0	1
Toronto	9	4	17	4	34
Vancouver	15	2	13	2	32
Number	33	7	32	6	78
Percent	42.3	9.0	41.0	7.7	100

4.0 Case Studies

In order to complement the survey results, case studies were conducted in selected municipalities within the four urban regions studied for this report: Toronto, Vancouver, Calgary and Saskatoon. In the Toronto and Vancouver regions, the municipalities where the survey respondents were most active were chosen for review. Calgary and Saskatoon were reviewed alone, as they are essentially uni-cities, covering most of their respective urban regions.

In each of the selected municipalities, approximately three developer interviews were conducted (exceptions were North York in the Toronto region, where two developers were interviewed, and Saskatoon and Surrey, where four developers were interviewed in each city). In total, 37 interviews were conducted. Municipal officials in each municipality, including finance, planning, parks and engineering officials, were also interviewed.

4.1 Toronto Region Case Study

Impacts Related to Various Dimensions of the Development Charge Regimes

Impacts related to relative charge levels

In the Toronto region, developers and officials from Richmond Hill, Mississauga, Oakville, and North York, were interviewed. Table 4.1, presents the varying charge levels for a single family home in each of these municipalities.

Table 4.1: Typical Rates on Single Family Units for the Case Study Municipalities

	Rich'd Hill	**Markham**	**Miss'ga**	**Oakville**	**North York**
Uniform SF Rate	$19,347	$19,240	$14,453.66	$14,346.20	$4875.00
Area-specific Rate	$46,648 per net ha	$31,862 per acre	$12,377.64 per net ha	0	0
Total Rate on Typical SF house	**$21,212**	**$22,426**	**$15,690**	**$14,346**	**$4875**

The interview results suggested that significnt differences in charge levels across municipalities do not have a direct influence on the reported impacts of development charges within each municipality on the study variables (density, location, timing). Interviewees from the municipality with the lowest charges (North York) did report that impacts there were muted by the very low level of charge in place. Interviewees from the mid-range municipalities claimed impacts on their development decisions would have been higher in higher charge municipalities. However, developers from municipalities with the highest charges, Richmond Hill and Markham, did not report especially strong impacts.

One possible explanation for the fact that there is not a direct correlation between charge levels and impacts is the fact that the impacts of development charges are highly moderated by the interaction of the charges with other factors that affect density, location and timing of development. The market for various housing types and sizes is a key factor in this respect: as one interviewee put it "it's always unit cost versus selling price. If the development charges are higher, I may be able to recoup it from a higher selling price." Impacts are also muted by the fact that the prices at which developers purchase land for development has often been discounted to absorb at least part of the charges that will have to be paid. Developers "work backwards" from the selling price of the housing unit to determine the price they can offer on the land. If the landowner wont sell at this price, the project does not go ahead. Development charges payable on the project are incorporated into this calculation as a fixed cost, so there is less motivation to alter the project to minimize development charges payable on a project.

Another factor of great importance is the zoning designation on the site. In many cases, developers do not contemplate or attempt to change densities because of the lengthy, expensive and unpredictable planning process involved. Thus, even though a different housing type, lot/unit size or number of units in a project would be preferable from an overall financial point of view, developers/builders often accept the existing zoning density as a given and proceed with the project (or not) on that basis.

One would expect the large differences in charge levels among municipalities to have a significant impact on intramunicipal location decisions, especially given that the standard of municipal services in urban areas across the region is more or less constant. In fact, however, development charges seem to have little impact on location decisions among municipalities. One explanation for this finding is that the level of charges are actually quite uniform *within each housing sub-market.* As indicated by Table 4.1, high charge levels appear in Richmond Hill and Markham, adjacent municipalities north of Toronto. Mississauga and Oakville have very similar mid-range rates, and are located together on the western side of Toronto. North York, within Toronto, has by far the lowest rate.

The interview results indicated that developers and builders tend to focus on particular sub-markets, either on the western or northern sides of Toronto or within Toronto itself, and not to venture too far afield from these markets. Interviewees reported that their adherence to particular submarkets is reinforced by real estate agents who bring development opportunities to the attention of developers and builders, and who themselves tend to stick to the local markets they know best. Subdivision approval is done at the upper-tier municipal level, and developers become familiar with local planning processes and personnel.

The interview results suggest that these moderating influences are particularly active with infill developers/builders. They are building on land where it is more difficult to change the zoning once established, where margins are higher, and where price competition is not as pronounced as in greenfield areas. Because they don't perceive the system as delivering

essential services to them, infillers are more likely to see development charges as a tax on development, a fact of life that affects them and their competitors equally and has little impact on their density and location decisions. The charges are absorbed into their price structure relatively painlessly.

Impacts related to method of assessment

Development charges in the GTA are relatively uniformly structured (compared to the Vancouver region). All five case study municipalities largely or entirely assessed development projects by applying a per-unit charge that varied with housing type. In those two municipalities with an added area-specific charge calculated on the basis of net hecterage, the per unit charge still made up the lion's share of the total charge. In the one municipality (North York) with a surcharge for development in limited areas, the surcharge itself was assessed on a per unit basis. The impacts of this charge structure are expected to be felt primarily on the density decisions of developers, rather than on their location or timing decisions.

Actual impacts on the projects discussed were relatively slight, but when taken together with impacts on overall development activity within the case study municipalities, effects were more important. As one interviewee put it: "development charges are not so much a factor in design of particular projects, but are important in deciding which projects go ahead. Development charges can kill particular projects." Three general trends in the interview results can be identified:
1) within single-family zones, development charges were discouraging small lots and encouraging large lot development.
2) within other zones, development charges were contributing to the desire to maximize building space.
3) within high-rise zones, development charges were encouraging a smaller number of larger units.
4) charges were discouraging the production of apartment units.
5) the lack of distinction in charges paid between singles and semis is an impediment to producing the latter.

The observed impacts have three sources: first is the fact that the charge is assessed on a per unit basis, second is the small number of building type categories in the development charge schedules and the third is the relative differentials among building types. The per unit assessment approach applies the same charge to a given housing type regardless of lot size or building unit size. This encourages fewer, larger lots (in low density) or units (in higher density) within any given building type because the total charges can be reduced while being spread out over the same frontage or sq. feet of building space.

Schedules usually identify three or four building types on which to assess charges. Given that zoning regulations may identify dozens of different building types within a given municipality, this is an obvious source of bias in the schedule. Essentially, the development charge regime averages out the expected impacts on services within a range of building

types and the charge to be applied. In order to reduce the per sq. foot impact of the charge, the developer has an incentive to build to the maximum size within that range.

The case study municipalities calculated the differentials between housing types on the basis of the average people per unit (PPU) expected for the various unit types. This approach favours lower density housing types because it assumes that increased demand for new municipal services funding through the development charges system are directly proportion to increase in population brought about by the project and that it is independent of the project density. Thus, the differentials among the various building types do not account for the efficiencies in providing municipal services to higher density projects. This effect is amplified by the fact that the education charges are averaged not within building types, but across all new residential development in the municipality.

It is important to note that impacts on density decisions depend to some extent on market conditions. In a hot housing market, where prices are flexible and charges can be passed on to the buyer, the development charge regime typically found in the GTA encourages the production of larger, more expensive housing units. In a cooler market, price ceilings are more important and this effect may be muted. Furthermore, the relative selling price per sq. foot of different housing types also affects how development charges will impact on density decisions. As we saw, in North York where condos are sold at a higher per sq. foot price than townhouses, the lower charge on condos reinforces a market bias for the higher density form. In municipalities like Markham, where the opposite price effect is found, lower charges on condos has little impact on encouraging higher density housing.

Impacts related to geographical application

Of the five case study municipalities, two (Mississauga and Oakville) had pure municipality-wide charge regimes, one had a modified municipality-wide regime (North York, with its special charges for downtown and subway corridor development), and two (Markham and Richmond Hill) had a mix of municipality-wide and area-specific charges. The application of the entire or a large part of the charge on a uniform basis across the municipality could produce impacts on developer decisions by subsidizing areas where growth will place great demands on municipal services. In particular, infill development could be subsidizing greenfield development. This possibility was explored in interviews with developers in the municipalities with both infill and greenfield development, i.e., all of them except for North York.

The results indicate that there is strong conviction among infill developers that they are indeed subsidizing greenfield growth. They pointed out that infill usually requires little in the way of new hard services and soft services are long established. In contrast, new services of all types have to be installed from scratch to support new development in greenfield areas. A minority of greenfield developers acknowledged that infill development was being discouraged by the development charges system by charging for services that were already present and paid for. This aspect of the development charges system is dealt with at greater length in the section on cross-subsidization.

In municipalities with area-specific charges, we found little evidence that developers took charge differences into account in their location decisions. This may reflect the fact that area-specific charges – where they exist – represent only a small portion of the total development charge bill paid, often less than 20 percent.

Impacts related to timing

There are three potential impacts of development charge regimes related to the timing of projects. First, charges are collected at certain project stages (charges on soft services are collected at the building permit stage while those on hard services are collected on subdivision approval), providing a motivation for developers to delay projects until they are certain of making sales. Secondly, charges may increase over time, providing an incentive to accelerate projects in order to avoid anticipated rises. Finally, if land was purchased in the distant past when charges were absent or much lower, then the developer may be more likely to redesign his project in order to reduce the extra burden, or, in the extreme, he may be forced to abandon the project altogether.

The interviews revealed, however, that developers did not time their projects in order to minimize development charges paid. In part, this may reflect the fact that charge levels in the case study municipalities have been stable over last few years. Indeed, provincial legislation prohibits municipalities from increasing charges at greater than the rate of inflation while a development charge bylaw is in effect (usually for a five year period). In the few cases where charges did increase rapidly (for instance in the introduction of education charges after the Supreme Court ruled that they were constitutional), some developers attempted to speed up project approvals. However, this had no impact on the density of projects.

The lack of timing impacts also reflect that fact that many of the projects discussed during the interviews did not lend themselves to a phasing strategy – either they were small projects on infill sites or they were part of larger greenfield projects whose phasing was being dictated by the municipalities in which the projects were taking place.

A small minority of interviewees had held the land for the projects discussed since before development charges were introduced. In these cases, impacts on location of the land were of course obviated. There was no evidence that these developers were more motivated either to redesign the project, but one respondent noted that he was considering abandoning a project that was rendered less feasible by the introduction of development cost charges.

Cross-Subsidization by Location

Another finding consistent across the five case studies was the opinion of infill developers that their payments into the development charges system were subsidizing growth in the greenfield areas of the municipality. These developers felt that they were getting very little in the way of increased services from development charge expenditures, noting that most such expenditures occurred in the high-growth fringe areas, not the already built up areas.

This contention has an immediate plausibility given the structure and purpose of development charges in the case study municipalities. On the one hand, the provincial legislation explicitly permits the levying of charges on infill development by providing that charges be collected on building permits rather than on subdivision approvals. On the other hand, the provincial legislation stipulates that funds can only be spent on growth-related capital needs, not on repairing existing infrastructure or upgrading it as service standards rise. Thus, the legislation permits the gathering of charges on development in the older fully-urbanized areas, but does not permit expenditures of the type that such areas are more likely to need: a municipality may spend a good part of its capital budget overhauling infrastructure in already urbanized areas, but it cannot use development charge revenues for this purpose.

Distributing Costs and Benefits in Oakville

The Town of Oakville was examined in more detail to determine the spatial distribution of d.c.-related costs and benefits.

Revenue Side: Oakville charges for all forms of infill development, with the proviso that developers be credited for the demolition of any pre-existing units on a redevelopment site. An estimate of the relative importance of infill and greenfield development as sources of funds flowing into the development charge system was provided by a CMHC database on housing units in the planning approval process. The database was available for two years only, 1997 and 1998, and listed development applications by geographical location within the municipality. A code designating whether the application was considered new development or redevelopment was attached to each application listed. When totalled, the database revealed that about 5.8% of the units in the approval process in 1997 were considered redevelopment. In 1998, the number was 11.1%.

Spending Side: Expenditures from the development charge funds were analyzed in order to differentiate between those investments that primarily benefited or were triggered by growth in the already urbanized area or growth in the greenfield areas. This was accomplished by reviewing capital spending reports with municipal officials, asking them to classify projects accordingly. Where projects could not be attributed to either infill or greenfield development, they were classified as having municipality-wide benefit. Expenditures in each of the three categories were then aggregated for each of the two years examined. The results appear in Table 4.2.

Table 4.2: Oakville Expenditures from Development Charge Funds: Benefitting Areas

	Benefitting Area	Amount	Percent
1997	Town-wide	$118,400	1.1
	Infill	$288,300	2.7
	Greenfield	$10,140,000	96.1
	Total	$10,546,700	100.0
1998	Town-wide	$432,200	7.2
	Infill	$74,000	1.2
	Greenfield	$5,520,800	91.6
	Total	$6,027,000	100.0

Summary: A comparison of the revenue and spending sides indicates that there is some evidence that infill is subsidizing greenfield development in Oakville. In 1997, the expenditures in infill areas were less than half the proportional share of total development represented by infill, and in 1998, the expenditures on infill areas were only about one-tenth the proportional share of growth. Planning officials claimed that the infill/greenfield ratios were quite typical for the two years examined and finance officials claimed likewise on the spending side.

Nonetheless, this analysis is in no way conclusive: trends need to be examined over a much longer period and more reliable estimates of the funding sources need to be secured. Furthermore, the fact that cross-subsidization may be occurring in Oakville does not mean that it is occurring in other municipalities in the region. In particular, we would expect those municipalities that are using a mixed system of municipality-wide and areas-specific charges (e.g., Richmond Hill and Markham) to show less evidence of cross-subsidization.

Relationship Between Land Use Planning and Development Charges

One of the findings that was most consistent across all five case study municipalities was the belief among developers that development charges regimes should support planning goals. This almost unanimous belief among interviewees seems to coincide with the growing confidence the private sector is putting in financial instruments – in contrast to command and control regulations – as a way of influencing private behaviour. "If you want us to do it", interviewees seemed to be saying, "make it profitable for us and we will!"

Interestingly however, most interviewees were also of the opinion that development charge regimes, as currently structured, undermine planning goals. Development charges overcharge infill development, fail to differentiate adequately among housing types, bias developers in favour of a smaller number of larger lots or units, promote expensive (and expansive) housing, and under most conditions, eliminate the market for apartments. The one aspect of the regional development charge regime that seems to favour compact development, namely the low fees in Toronto compared to surrounding suburbs, may be neutralized by land price differentials and the limited availability of suitable intensification sites within Toronto.

These findings raise the question as to the actual interaction between the officials, processes and goals of the planning system on the one hand and the officials, processes, and goals of the development charges system on the other hand.

A review of development charge studies (the voluminous studies that are undertaken by consulting economists to calculate and justify the development charge schedule imposed by municipal bylaws) and interviews with planning officials reveal that the planning system has limited interaction with the development charge system. First of all, planning officials are only marginally involved in the actual preparation of the development charge studies and the bylaws themselves: their role is usually limited to furnishing statistical data, such as expected population growth and average persons per unit for the various housing types. The implementation of the bylaw and the collection of levies is administered by the finance department, as is the defence of the bylaw during any appeal by developers.

Secondly, development charges are not conceived in any of the supporting documentation as being an instrument in the realization of planning goals. They are understood and approached exclusively as financing instruments, i.e., methods of raising the money to finance urban growth. No municipality had undertaken a study to shed light on the implications of the development charge system for planning goals and most municipal officials contacted for this research claimed that development charges could have little if any planning implications: "the charges are too low and at any rate are absorbed by landowners in the form of lower selling prices to developers".

Thirdly, the role of planning policies is also limited. The services that will be necessary to support the projected growth in the municipality are identified in the long-term capital plan, which in turn reflects the long-term development goals found in the official plan, prepared by the planning department. However, the growth management policies found in the official plans are ignored in the design of development charge bylaws.

For instance, all case study municipalities had official plan policies stating that intensification would be encouraged. However, no development charge bylaw reviewed in the GTA exempted intensification from the payment of development charges. This is true in spite of the fact that the provincial legislation under which the bylaws were prepared explicitly permits municipalities to make such exemptions. Nor did municipalities provide discounts or exemptions for development in centres or subcentres, around which official plans were constructed. Indeed, the only charge differential applied to a municipally designated development node was in North York, where development charges were *increased* by two-thirds in order to pay for local improvements.

When asked about the lack of connection between planning policies and the geography of development charge rates, municipal officials noted that exemptions would conflict with the main objective of the development charge system, i.e., to finance municipal infrastructure. They also noted that such an approach would undermine the "neutrality" of the system with respect to land use outcomes and subject the system – already very

complicated and controversial – to competing demands from various interest groups for special treatment. In other words, municipal officials in the GTA appear much less interested in using development charge regimes as an instrument of municipal policy making than do private sector actors. Planning goals, in their opinion, are better achieved by planning regulations than by tinkering with financing instruments.

4.2 Vancouver Region Case Study

Impacts Related to Various Dimensions of the Development Charge Regimes

Impacts related to the relative charge levels

Table 4.3 indicates in summary form the range of development cost charges across the five case study municipalities reviewed in the Vancouver Region. The table makes a number of assumptions (such as typical unit sizes for the various housing types) in order to bring the various development cost charge systems into relief. The figures presented do not include the GVRD levies.

Table 4.3: Typical Development Cost Charges across the Five Case Study Municipalities

Dwelling Type	City of Van	North Van	Coquitlam	Richmond	Surrey
Single Family	N/A	$10,000	$12,750	$13,092	$19,270
Low Density Multi (1,700 sq. ft. town)	N/A	$7,500	$8,700	$10,119	$17,493
High Density (990 sq. ft. apt. condo)	$5,562	$5,000	$7,560	$7,087	$13,671

The table shows that charges vary widely across the five municipalities, with Surrey having the highest rates for all unit types. Because of the different assessment methods (see below) used in the various municipalities, it is not expected that there would be a direct relationship between charge levels and impacts on development decisions. However, the interview results suggest that there is a rough correlation, with high charge municipalities – like Surrey – having the highest reported impacts on development decisions. Low charge municipalities like Vancouver and North Vancouver were associated with the the lowest assessment of impacts in interviews, with respondents making conscious note of the relatively modest levels in answering our interview questions. However Richmond, which has higher charge levels than Coquitlam, had lower impact reports from interviewees. Thus, we can conclude that charge levels are important in determining impact levels among the case study municipalities (and presumably in the GVRD as a whole), but that the relationship is not a direct one: it is conditioned by the approach taken to development cost charges in the particular municipality.

The interview results suggest that many developers are sensitive to differences in charge levels among municipalities when making location decisions. Low charges in municipalities such as North Vancouver were seen as attracting development by making more projects feasible, while Surrey was widely cited as a municipality whose development cost charges were beginning to stifle growth. As the market for new housing softens in the GVRD, falling selling prices put more pressure on developers to seek opportunities with the

lowest fixed costs. This dynamic is leading to increased attention to intermunicipal differences in development cost charge levels.

A number of other factors, however, are moderating this effect. First of all, smaller developers and builders are tied to local markets and more comfortable with particular political jurisdictions and cannot easily roam the region looking for development opportunities. Thus, there is a certain rigidity on the supply side that prevents development cost charge differentials from having a more impressive impact. Secondly, low charge municipalities may lack land appropriately zoned and located to attract development and thirdly, low charge municipalities may have higher land prices, undermining some of the locational advantages offered by lower development cost charges.

Impacts related to the method of assessment

Methods of assessment in the five case study municipalities varied widely: from housing type in zoning districts (Surrey), to density per acre (Richmond), to floor area (Cities of Vancouver and North Vancouver). The evidence from the case studies suggests that developers from municipalities with development cost charges based on building density reported lower impacts on density decisions than those with charges assessed per unit by building type. This corresponds to theoretical expectations: charges based on density do not average charges within a building type category and therefore generally do not provide an incentive for developers to redesign projects to lower assessments.

Respondents in Coquitlam, where charges are assessed on a per unit basis, reported that differences on charges paid between building type or lot size, impacted decisions, or were starting to affect trends in the municipality as markets softened and development cost charges were less easily absorbed, especially on the smaller, less expensive units. On the other hand, respondents in Surrey, where charges are assessed on a per unit basis for single family housing and are extremely high, reported that the charges were favouring smaller lots as developers took steps to reduce the selling prices and revive the market.

Impacts related to geographical application

Except for the City of Vancouver, the case study municipalities applied their development cost charges on a more or less uniform basis throughout the municipality. In the case of North Vancouver, charges were applied throughout the municipality without geographical exceptions. In Coquitlam, Surrey, and Richmond, charges were varied for specific areas of the city, but the vast bulk of new building activity was taking place within a single zone across which charges were averaged out and assessment were uniformly applied.

Although evidence is spotty, the varying charge levels in the City of Vancouver appeared to have very limited impact on location decisions within the municipality. This may reflect the relatively low levels of charges there and the high levels of other costs, including land.

With the exception of Richmond and Surrey, the case study municipalities focussed exclusively either on urban infill or greenfield developments, so there was little

opportunity to determine the extent to which respondents thought there was cross subsidization between these two types of development. In Richmond and Surrey – the two municipalities with both a municipal-wide charge and a mix of greenfield and infill development – infill developers interviewed indicated that the development cost charge systems were subsidizing greenfield development at the expense of infill development. This is explored in more detail in the section below on cross-subsidization.

Impacts related to timing

As mentioned in the Toronto case study, there are three potential impacts of development charge regimes related to the timing of projects. First, charges are collected at certain project stages, providing a motivation for developers to delay projects until they are certain of making sales. Secondly, charges may increase over time, providing an incentive to accelerate projects in order to avoid anticipated rises. Finally, if land was purchased in the distant past when charges were absent or much lower, then the developer may be more likely to redesign his project in order to reduce the extra burden, or, in the extreme, he may be forced to abandon the project altogether.

The hot market of the early nineties meant that there were no examples of developers holding land for an extended period. Consequently there was little evidence to support the hypothesis that holding land for an extended period made it more sensitive to the impacts of development cost charges because the land price was not discounted for development cost charges. Although there was considerable evidence that development cost charges do force down land values to reflect the cost of development cost charges. For the most part, respondents felt the cost of land reflected the development cost charges being charged, the exceptions were where the land was being held for a number of years and development cost charges increase, or the land was purchased prior to development cost charges.

There was evidence that developers had modified the timing of projects, if there were changes pending in the development cost charge structure, in order to keep project costs down. As expected, this was especially true of developers in municipalities with the most rapidly rising rates, e.g., North Vancouver, where rates multiplied 15 times with the adoption of a new bylaw in 1997.

A number of developers commented on the increasing fees, levies and charges directed at the residential construction industry in BC, noting the current environment makes it is very difficult to develop a business in the province. Many talked about projects they are doing in the US market and their reduced level of business in BC.

Cross-Subsidization by Location

The interview results reveal that infill developers in two case study municipalities believe that infill development is cross-subsidizing greenfield development – Richmond and Surrey. Each of these two jurisdictions have a mix of greenfield and infill development,

they both charge for infill development, and they use uniform rates, which can end up subsidizing developments in high-cost areas.

Distributing Costs and Benefits on Lulu Island

In the City of Richmond, the bulk of residential development occurs in one large zone called Lulu Island. The island incorporates an agricultural area that is in the process of accommodating new development (Terra Nova), fully serviced areas where intensification is occurring, and partially serviced areas where lot subdivision is taking place and new services are being installed. Some capital investments are not triggered by or meant to benefit any one of these areas in particular and can be attributed to a city-wide category. A fifth category is formed by spending to benefit agricultural areas within the city limits. In the mini-study outlined below we attempted to estimate and compare the revenue and spending in each of these four contexts for a two year period. We were assisted in this task by officials from the city's planning department, finance department and engineering department.

Revenue Side: In order to estimate the revenue paid into the funds, we obtained building permit data for 15 different planning areas within the municipality for the period July 1997 to June 1998 and asked a municipal official to estimate these figures for the previous year. Each of the 15 planning areas were categorized according to the five categories outlined above. The results appear in table 4.4.

Table 4.4

Year	Intensification	Backlot Infill	Greenfield	Agricultural	Total
1996-97	390	260	120	1	771
1997-98	297	250	112	1	660
Total	**687**	**510**	**232**	**2**	**1431**
Percent	**48.1**	**35.6**	**16.2**	**0.1**	**100**

Spending Side: In order to estimate the spatial distribution of expenditures on capital projects from the development cost charge funds, we asked a municipal official to help us classify each line item in the capital budgets for two years (1997 and 1998) according to the categories outline above. Projects were assigned to the various categories according to the category of land it benefited or the development of which triggered the need for the project. The results appear in table 4.5.

Table 4.5

Year	Inten-sification	Backlot Infill	Greenfield	Agri-cultural	Town-wide	Total
1997	1,942,980	4,619,040	4,720,980	0	3,419,000	14,703,997
1998	3,340,951	1124762	257,143	380,952	2,910,476	8,016,282
Total	**5,283,931**	**5,743,802**	**4,978,123**	**380,952**	**6,329,476**	**22,720,279**
Percent	**23.2**	**25.3**	**21.9**	**1.7**	**27.9**	**100**

Summary: The results of the above exercise reveals that the only development categories that paid into the development cost charge funds less than they received in terms of benefiting capital investment are greenfield and agricultural. Intensification of the already fully-serviced areas generated 48.1 percent of the development charges (by our estimate), but received only 23.2 percent of the benefit. Backlot infill paid in 35.6 of fees and received only 25.3 percent of investments, while greenfield development paid only 16.2 percent of fees but received 21.9 percent of the benefiting structures. Of course, this mini-study must be interpreted cautiously due to the many assumptions it makes, including drawing a direct correlation between net units built and development cost charge revenues. And, as with the Toronto cross-subsidization study, we cannot be too cautious about drawing results from only a two-year window. Despite these limitations, the exercise provides at least some evidence that infill developers may be justified in claiming that their payments into development cost charge funds are helping to subsidize growth in greenfield areas.

Relationship Between Land Use Planning and Development Charges

In some ways, the development cost charge regimes in place across the five case study municipalities are reinforcing planning goals. The lower development cost charges that apply in the inner areas of the metropolitan region (City of Vancouver, City of North Vancouver) are making these areas more competitive compared with the outlying suburban areas, a goal that is strongly upheld by the GVRD Livable Region Plan. Moreover, there appears to be a move within the case study municipalities away from per unit charges towards per sq. metre charges, a tendency that is widely seen to favour the affordable, smaller units that are promoted by OCP policies. And, as mentioned earlier, Surrey has adopted a discounted charge for its City Centre area, which the GVRD plan and the municipal OCP designate as an area for higher density, focused growth.

However, there are countervailing influences at work within the region. Of the five municipalities studied, only one has adjusted its charge specifically to meet planning objectives, making Surrey the exception that proves the rule: most municipalities have not given serious consideration to use of the development cost charge system for such activist goals. During our interviews with developers, we were told that planners have set density targets for designated high-density mixed-use centres across the region, but that a combination of land economics and development cost charges makes achieving these

densities unrealistic. Only in the centre of the region do the rents and selling prices that can be obtained justify the extra construction costs associated with high density development.

To deepen our understanding of the relationship between planning goals and development cost charges in the region, we turned our attention briefly to the role of planning departments, goals and documents in the preparation of development cost charge bylaws.

The role of the planning department in the preparation of development cost charge calculations varied across the five municipalities. In one instance the planning department took the lead role, but this was the exception as elsewhere the lead was taken by the engineering/infrastructure departments (e.g., North Vancouver) or treasury/finance departments (e.g., Richmond, Surrey). Typically, planners were relegated to the sidelines during the preparation and revision of bylaws as engineering departments led the way on the technical side and finance prepared detailed cost estimates.

As in the Toronto region, planning departments in the Vancouver region were usually asked to supply population projections, housing unit forecasts, and PPUs for the various types of units. The OCP serves as a basis for the capital plan, upon which the various services necessary to support growth were based, but there was little in the way of interdepartmental negotiation, with the planning department bringing its growth management goals to the table.

Development cost charges are seen almost exclusively as a means of raising revenue. Equity issues are sometimes raised, such as the differential impact of charges on residential versus employment uses, or how to share the burden of paying for capital projects between new and existing residents. So are the political benefits of development cost charges sometimes recognized, such as the effect levies have in addressing citizen concern over the costs of new growth. But the impact on planning goals are almost never discussed.

There are some signs, however, that the situation is changing. The City of Vancouver Planning Department has adopted explicit policy statements in its district plans for those areas with levies. The City of Richmond, having recently adopted its OCP, will be reviewing development cost charges in terms of their relationship to the goals and objectives in the OCP. When placed beside Surrey's experiment linking its levies for Surrey City Centre with its planning goals, these initiatives may suggest a more integrated role for planning and planners in the future.

4.3 Saskatoon Case Study

Impacts Related to Various Dimensions of the Development Charge Regimes

Impacts related to relative charge levels

Because Saskatoon covers most of the urban region, it was assumed that its development levy levels would have no impact on the locational decisions of developers with respect to the municipality chosen. In fact, the interviewees told us that their choice of municipality in which to pursue development is being profoundly affected by development levies. The last few years have seen the expansion of the commutershed and an increase in the number of lots being developed in satellite communities outside Saskatoon. Interviewees felt strongly that the lower levies outside Saskatoon – usually in the order of $2-3,000 per lot – were starting to have a serious impact on the demand for housing, especially lower-cost housing, within the city limits. According to planners at the City of Saskatoon, about 20% of total lots developed in the region in 1998 (40% of the single family housing development) were in the rural municipalities outside the city proper.

Impacts related to method of assessment

According to the developers interviewed, the development levy system used in Saskatoon has a significant impact on their density and housing type decisions. Unlike many other municipalities studied, Saskatoon charges on a per front-metre basis. Although the cost per front metre rises after the parcel reaches a certain size (a depth of 60 m), the levy paid is not affected by the number of units on the parcel. Thus a duplex pays the same charge as a single family home, as long as the lot has the same frontage, and a three-storey condo or apartment building pays the same levy as a three-storey building on the same parcel of land. As one of the officials interviewed for this case study pointed out, the system gives developers an incentive to maximize the number of units on their parcel because the cost of the levy on a per unit basis falls as the number of units rises.

Of course, the research method does not allow us to quantify the impacts, but we can point to conditions under which the impacts can be expected to be more apparent. In Saskatoon, the competition over lot pricing that is generated by drastically lower lot levies and land prices in surrounding municipalities seems to amplify the impact of levies on density decisions. As the developers interviewed pointed out, they cannot expect purchasers to absorb ever increasing prices because lower-cost alternatives are available immediately across the municipal boundary. Another feature of the Saskatoon situation that may be adding to this sense of a price ceiling on lots is the fact that the municipal corporation itself is the dominant land developer in the city. As a non-profit developer, the city is determined to contain price increases as much as possible. With little flexibility on the selling price of their lots, developers within the city are pressured to address rising levies by reducing lot sizes and moving to higher density dwelling types.

Impacts related to geographical application

The city uses a municipality-wide approach to the calculation and assessment of levies. However, in practice, not all development in the city falls under the levy system. Because

the levies policy applies only to the subdivision of land, infill development is not routinely levied when it occurs without land subdivision. Whether and how much infill developers pay into the system seems to depend on the discretion of officials and the outcome of site-by-site negotiations with developers.

It is not surprising then that inconsistent results were obtained on this topic from the developers interviewed with one claiming that infill subsidized greenfield development and the other claiming the opposite effect.

Impacts related to timing

Interviewees reported that levies were not causing them to speed up projects in order to avoid price increases. This is consistent with the claim of a municipal official that levies have risen gradually, but not at a much greater rate than the general inflation rate.

Relationship Between Land Use Planning and Development Charges

Saskatoon's development levy system may be causing some leap-frog development into surrounding rural communities. This may be interpreted as undermining Saskatoon's planning goal of achieving a defined urban form by dispersing development unnecessarily. However, this effect reflects less on Saskatoon's commitment to its planning goals and more on the decision of rural municipalities to price their levies much below the actual costs of service provision and could be corrected by regional co-operation or provincially-imposed regulation.

Within Saskatoon, we have found that in a number of respects, the development charge system in place appears to favour planning goals of a more compact urban form where infill is encouraged as are a range of densities and housing types. Even if we recognize that land prices and zoning restrictions are major determinants of density and that the development levies work within the parameters established by these overarching variables, the interview results seem to suggest a consistency between the development charge regime and planning goals.

The question arises as to whether this consistency is fortuitous or an intentionally crafted policy outcome. The available evidence suggests that the answer lies somewhere in between.

The development levy system in Saskatoon is led by the "Infrastructure Department", essentially an engineering and public works agency. The finance department plays no role in policy formulation: it is responsible only for the collection and accounting for revenues. The planning department plays an intermediate role in that it is not directly involved in the setting of levy rates or policies, but it does interact closely with the Infrastructure Department over the five year Development Programme. The Programme, co-authored and revised each year by the two departments in consultation with developers, forecasts lot creation and absorption for each neighbourhood in the city. It conforms in a broad way

to the Development Plan for the city, but fleshes it out in terms of the phasing of growth across the 3-5 new neighbourhoods that are being developed at any given time. The programme serves as a basis for capital budgeting in the city.

The role of development levies in this system is to minimize the impact of differentials in servicing costs among the various areas ripe for development. According to one city official: "by averaging out the costs of developing across new neighbourhoods, the development levies help minimize the impact of different servicing costs on planning decisions and puts all developers on an even playing field." In other words, the average cost approach is designed to minimize consideration given to the efficiency of infrastructure provision in the growth of the city.

The front-metre assessment approach taken by the city is valued for its administrative simplicity: whatever impacts it has on the density decisions of developers is fortuitous. The city's de facto exemption of much infill development is due to the fact that it has not yet undertaken the expensive engineering studies that would be required under provincial law to justify charges collection of levies on infill development.

In other words, the development levy system is not intentionally used to promote intensification or more compact development patterns. According to a municipal official, the Planning Department would like to see a more proactive system in place, where levies would be applied for all development in the city but could have levels vary in order to promote planning objectives.

4.4 Calgary Case Study

The Calgary case study involved interviews with three developers. Developers were selected to provide a variety of types of development including greenfield subdivisions and an inner city redevelopment in the south centre area.

The greenfield developers both indicated they paid about $15,000 per acre in development charges. The urban infill developer was uncertain as to the amount paid in development charges, and had been surprised when asked to contribute $100,000 for a future overpass for a walkway. He noted that while there are guidelines in place for the most part, aldermen have a lot of discretion regarding the application of charges to inner city redevelopment.

Two of the respondents felt the price they paid for the land (in 1991 and 1997) reflected the development charges. The third developer had held the land since 1979, and said the price "probably" incorporated the development charges, although the storm assessment was very high. There was unanimous agreement that the homeowner ends up paying for the development charges.

Role of Development Charges in Density, Location and Timing of Projects: There was consensus that development charges did not influence density or location of projects. All three developers were loyal to the Calgary market – "it's as good as it gets" and "Calgary has a positive attitude". The market conditions were the predominant factor in determining whether to proceed with each development. The land for one of the 400 acre subdivisions had been held since 1979, and it was felt the timing was right to move the asset, the services were available and the project was in a growth corridor that had not been anticipated when the land was purchased. Availability of services and amenities were the primary reasons for selecting the development locations. In the case of the infill development it was proximity to inner city activities. The prime influences on housing density and mix were consumer needs and fast absorption in terms of the subdivision developments, and, in the case of the inner city project, building to maximum density while still retaining elegance.

Knowledge of pending revisions to development charges prompted two of the developers to accelerate phases of their projects. In neither case did this have any impact on density. In one case the project was accelerated by designing as much as possible to get approval before the increase came into effect. The other respondent said the development charges were partially responsible for accelerating the project, but that it was largely related to sales.

Role of Development Charges in Overall Development Activity within the Reference Municipality: Insofar as the impact of development charges on the overall development activity of each developer within Calgary, there was a varied response. One developer felt strongly that this did affect his decisions and that off-site and acreage assessments prohibit the construction of affordable housing on a number of sites that he had considered within

Calgary. Another did not see any impact saying the market is the overriding factor in the final analysis and where the developer puts in excess capacity, e.g. a pump station, the City will reimburse. The third acknowledged that it is the large increases in fees that are the problem, and that a last resort was always to look for projects on the City boundary which can use City services without the high City development charges. There was concern that the need to pay development charges would hinder the production of affordable housing. Respondents did not see housing types being affected differentially, as the development charges are on an acreage basis.

Normative Questions: Respondents felt the development charges were not subsidizing projects in certain locations while penalizing others. The urban infill development is in the south centre area of Calgary, where levies for servicing and access (transportation upgrades to adjacent roadways) are negotiated on a site-specific basis. One greenfield developer commented that with regard to one major storm sewer system the City could have written down the project earlier, rather than charging developers as it did.

Two out of the three developers thought the development charges were justified. The third respondent thought they were "quite extreme".

Reaction was mixed as to the extent development charges cover the cost of new growth. Responses ranged from the developer subsidizes the City and taxpayer by "donating an asset" when the "developer/homeowner pays to install water and sanitary sewer and then gives it to the City, and the City then charges for water", to development charges cover most of the cost of growth in new communities, with the exception of major transportation facilities, to "everyone should be responsible for the cost of growth".

There was consensus that the development charges should not be changed to cover more of the full costs of municipal services to support new growth. There is concern that increased costs on an annualized basis and unrelated to inflation will affect growth. One suggestion was to maintain the status quo and for the City to introduce more flexible standards, e.g. reduce road widths which would not affect the end product but would cut costs. It was acknowledged that politicians are apprehensive about reducing standards. In this vein, it was noted that the public is not educated by the industry about how costs are incurred and distributed.

Skepticism prevailed with regard to the relationship between development charges and planning policies, with the exception of one respondent who said they should be structured to support planning goals. One respondent thought development charges were neutral towards planning goals, and suggested that compact development does not necessarily have lower infrastructure costs and lower environmental impacts, citing an example of a project increasing density from 6 units/acre to 7 units/acre required a $25 million interchange. Two respondents noted that planning goals of compact, mixed use development were not necessarily accepted by the market place, and the market is driven by the consumer. As a result, there was resistance to the notion of development charges being structured to support planning goals.

Impacts related to relative charge levels

Developers interviewed for this case study reported the charge as having little impact on their development decisions. One explanation may be found in the relative level of charges. At approximately $5000 per lot, charges are relatively low in Calgary compared to other municipalities studied (e.g., Saskatoon). The lower level of charges was reflected in the fact that there was a general acceptance among interviewees of the charges and a feeling that they were equitable, except perhaps those related to storm/water assessment.

The fact that all developers interviewed believed that the home purchaser would ultimately pay the development charge indicates that housing prices are elastic in the Calgary market. This may also help to explain why charges were seen as having little impact on the study variables in Calgary. If house prices can rise to cover the charge, then there is little pressure to adapt development decisions to neutralize the effect of the charge on house prices.

This explanation is also consistent with the observation that although charges may not be having a significant impact on the nature (density and location) of development undertaken in the city, they are still seen as negatively impacting housing affordability.

Likewise, the developers seem committed to the Calgary market and had not actively moved their development activity into the rural areas surrounding the city. This may reflect the relatively low level of the charges within Calgary and the fact that surrounding municipalities such as Cochrane, Airdrie, Chestermere and Okotoks have their own Development charges for sewer, water, recreation and roads, or require that services be paid for directly. In the smaller urban municipalities, the charges have tended to be higher historically, but do vary with some having high recreational charges and others not having the same extensive sewer or storm utilities. The Rural Municipalities of Rocky View and Foothills have limited cost charges, and do not provide water and sewage systems. The former Regional Planning Commission tried to limit development in the rural municipalities. Housing starts for the region indicate that only a small percentage (10% to 15%) of new development is taking place in the rural areas outside the city proper. The City of Calgary has an aggressive policy of trying to annex land for urban development to maintain control.

Impacts related to method of assessment

The acreage based approach to development charges should theoretically encourage developers to build at higher densities in order to reduce per unit costs. However, there was no overt evidence that this was the effect on the three developers interviewed for this case study. Interview results suggested the coverage basis of the development charges has no influence over density and housing mix. The infill developer did say that he built to the maximum density permitted to bring per lot costs down, but he did not relate this to

development charges. This result may reflect the fact that charges are very low in Calgary and not likely to trigger changes in the nature of projects.

Impacts related to geographical application

The interviews with developers provided no indication that development charges had impacted decisions on the location of their developments within Calgary. This may reflect the relatively low level of the charge and the fact that the greater part of the charge is independent of location within the municipality, with only the storm and sanitary charges varying by location.

Impacts related to timing

The interviews suggest that there is some impact of the charge, in anticipation of an increase, on the timing of development,. "From 1994 through 1997, the City maintained services while the tax rate was frozen and the purchasing power of tax revenue was gradually shrinking because of inflation. In 1998, the City was able to apply a moderate increase to the municipal property tax rate" (City of Calgary, 1999: 12). In 1998, the average fee level was $5,000/unit, compared with average levy of under $3,000/unit in 1994.

Relationship Between Land Use Planning and Development Charges

The development of the levy approach in Calgary was at the initiative of the Engineering Department to recover some of the major costs of growth being generated by new development. It was not anticipated that the development charges would have an impact on land use. The acreage approach was selected on the basis of efficiency. Not involved at the outset, the Planning Department became involved when managing the growth strategy, in terms of recovering the major costs of growth. Planning was part of the team creating the rationale, setting the formula and negotiating with the industry.

5.0 Conclusions

This research explores a variety of approaches to development charges in Canada and assesses their impact on urban form. The development charge regimes in the urban regions of Toronto, Saskatoon, Calgary and Vancouver were the subjects of the study. Some of the key findings include:

Charge levels

- Although it is difficult to compare charges among municipalities using such different assessment approaches, it is clear that the charges in the 12 municipalities that we studied in detail vary widely. In Calgary, for instance, the average charge on a single family home might be only $2000, while in Richmond the comparable home would pay over $20,000 in charges.
- The remaining municipalities are evenly distributed between those extremes, with most of the high charge municipalities being in the GTA and most of the low and medium charge municipalities in the west of the country.

Units of Assessment

- Again, the municipalities included in our study used a wide array of units in assessing the charges payable on development projects.
- Municipalities in the GTA tend to use the number of units as the basis for their charges and to vary the charge by unit type. A small minority of municipalities use area specific charges based on the hecterage of the project. In the GVRD, the situation is more complex: per unit rates are used in some cases, but there is a move away from this approach and towards the use of floor area, or density measures to assess projects. Some municipalities, like Surrey, have literally dozens of charge categories, based on zoning and building type. Calgary and Saskatoon use site hecterage and frontage based charges respectively.

Geographic Scope

- A municipality-wide approach was found to be the most common way of designing development charges across the country. The majority of municipalities in the GTA use this approach, as does Saskatoon and many of the municipalities in the GVRD.
- A minority of municipalities used a mixed approach: municipality-wide charges might be applied for some services, while others (most often storm drainage) might be applied on an area-specific basis.

Services Charged For

- Municipalities in BC, Alberta, and Saskatchewan are restricted in the range of services for which they can charge, whereas municipalities in Ontario have a much wider range of potential application, including both hard and soft services.

Rates of Change

- The rate of increase in charges varies as well. In Ontario, charges have been relatively stable over the 1990s, varying with inflation rates in many cases. In contrast, charges in the GVRD have increased at many times the rate of inflation in some cases. In Calgary charge levels have increased an average of 60 percent over the last four years, and in Saskatoon, rate rises have also been brisk.

Each of these dimensions of development charge regimes has an impact on the study variables: density, location and timing of development projects, and ultimately on urban form.

Charge levels

- We found that charge levels were linked to reports of more serious impacts, both in the survey results and in the case study interviews. Developers in municipalities with higher charge levels, regardless of which region they were in, were more likely to perceive impacts from development charges on their project decision making.
- Where levels were low, developers reported that their decisions on particular projects within the reference municipality would or could be affected if levels were higher. However, they sometimes noted that low levels did affect them in one way, i.e., by attracting them to develop in the low level municipality.
- This finding accords with our expectations. As levels rise, developers will put more energy into and undertake more action on reducing their impact on particular projects.
- Up to a certain point, developers will adjust projects to minimize development cost charge payments, or more precisely, to maintain profits. After development charges reach a certain level, however, projects that would have otherwise been feasible are abandoned as uneconomical. Our overall assessment is that it is actually this latter effect that is more significant in terms of affecting urban form.
- Although we did not attempt to gauge it in any way, high levels also seem to be linked to involvement in the development charge process itself. A number of developers in the GTA and in high charge areas in the GVRD mentioned their efforts to intervene in political or legal processes to reduce charges within the municipalities where they are active.

Units of Assessment

- We discovered that the form of assessment does have an impact on the reaction developers have to development charges. Where assessments are based on unit size, site density, acreage, or frontage, developers are less likely to make density adjustments compared to assessments based on per unit basis.
- We also found, however, that the way development charges affect density is highly sensitive to other factors that condition developer decision making. Most importantly is the market cycle: when smaller, affordable units are in demand for first-time home buyers or when house prices are flat or falling, per unit regimes will favour smaller lots and unit sizes. When move-up buyers predominate in the market or when prices are rising, per unit development charges will favour larger lots and unit sizes.

- This finding, which emerged from the interviews, helps account for the ambiguous survey findings concerning the impact of development charges on unit size and lot size.
- The subsidization analysis we conducted in the case study component of our research indicated that the charges imposed did not recognize the efficiency differentials for different densities of development. For the most part, it appears that higher density development may be subsidizing lower density development, but the opposite effect is possible under certain conditions, i.e., with charges based on unit size.
- This subsidization is perceived by developers – for instance they are frustrated that high density development that should require fewer municipal services paid for through development charges are charged the same per capita rate as low density development.

Geographic Scope

- We found the impact of area-specific charges to be quite muted, due to the fact that they were usually admixed with larger doses of municipality-wide charges and were therefore difficult to disentangle in both the survey and the interview.
- The survey indicated that many developers sometimes chose to locate in lower charge areas, but the interviews revealed that location decisions within the municipality were not consciously linked to a strategy to reduce development charges. Once again, in most municipalities with area specific charges, the variable component is small compared to the uniform charges.
- The subsidization analysis presented some limited evidence that infill developers active in municipalities with uniform charges applied across the jurisdiction were subsidizing growth in greenfield areas. Again, the developers seemed to be aware of this implicit subsidy, but it is not clear what impact it has on urban form. We encountered some examples of infill projects that were being abandoned partially due to high development charges, but this issue calls for more detailed study than we were able to bring to it.

Rates of Change

- The impact of development charges on timing appeared to be important from our survey, but when we asked developers about this in person, we received different answers. The survey suggested that densities could rise as result of timing changes brought about by development charges. But in our interviews, few developers mentioned this impact.
- Even where interviewees acknowledged delaying or phasing projects to spread out the payments, almost no one reported that it had any impact on density. Obviously, further research into the impacts of this dimension of development charges is called for.

In summary, we did uncover a number of important impacts related to development charge and how they are structured. However, it is important to acknowledge that there are significant dimensions of development charges that we were not able to explore. We did not find municipalities that:

- used exclusively area-specific charges

- structured charges so as to actively use them as planning and growth management instruments
- incorporated environmental or social goals into the charge structures
- adopted a range of charges on different land use densities that would capture the efficiencies associated with them
- routinely promoted intensification through the development charge system.

In fact, we found that most municipalities were focussed on the role of development charges in generating revenue to help cover their capital needs: they had little interest in land use or planning implications. It was not unusual to encounter officials during the research we undertook for this project who denied that development charges had *any* implications for development activity or urban form.

It is hoped that this study will help alter this situation by sensitizing stakeholders to the potential interactions between development charge structures and land use outcomes.

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