



**NEW HOMES AND RED TAPE:**

# Residential Land-Use Regulation in Alberta's Calgary-Edmonton Corridor

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# Contents

Executive Summary / i
1 Introduction / 1
2 The Data / 4
3 Survey Results / 9
4 An Index of Residential Land-Use Regulation / 22
5 Professionals' Concerns and Policy Recommendations / 24
6 Conclusion / 25
Appendix 1. Constructing the Index / 26
Appendix 2. Approval Timelines by Housing Type and Rezoning / 28
Appendix 3. Rezoning by Housing Type / 32
Appendix 4. Survey Questions / 34
References / 36
About the authors / 39
Acknowledgments / 40
About the Fraser Institute / 41
Publishing Information / 42
Supporting the Fraser Institute / 43
Purpose, Funding, and Independence / 43
Editorial Advisory Board / 44

## Executive Summary

As an increasing number of Canadians move to major cities, housing prices have continued to rise. Understanding how public policy affects the supply of new homes is critical. The Fraser Institute's survey of housing developers and homebuilders assesses how residential land-use regulation affects the supply of new housing in Alberta. *New Homes and Red Tape: Residential Land-Use Regulation in Alberta's Calgary-Edmonton Corridor* is the second in a series of publications tallying the data to represent industry professionals' experiences and opinions of how residential development is regulated in cities across Canada. This report, which follows several major studies in the United States on this topic, presents survey results for cities in Alberta's Calgary-Edmonton Corridor (CEC).

We found quite disparate estimates of typical project-approval timelines in CEC cities: estimates range from 6.1 months in Strathmore and 7.3 months in Red Deer to 13.2 months in Chestermere and 15.1 months in Rocky View County.

Typical approval timelines in Calgary and Edmonton, the CEC's two largest cities, are tied at 13.1 months, although Calgary's are the region's most uncertain. Calgary's average reported impact of timeline uncertainty is rivaled only by Rocky View County. In Edmonton, our survey suggests the impact of timeline uncertainty is in the middle of the pack, while results for Strathmore and Cochrane on this measure are particularly encouraging.

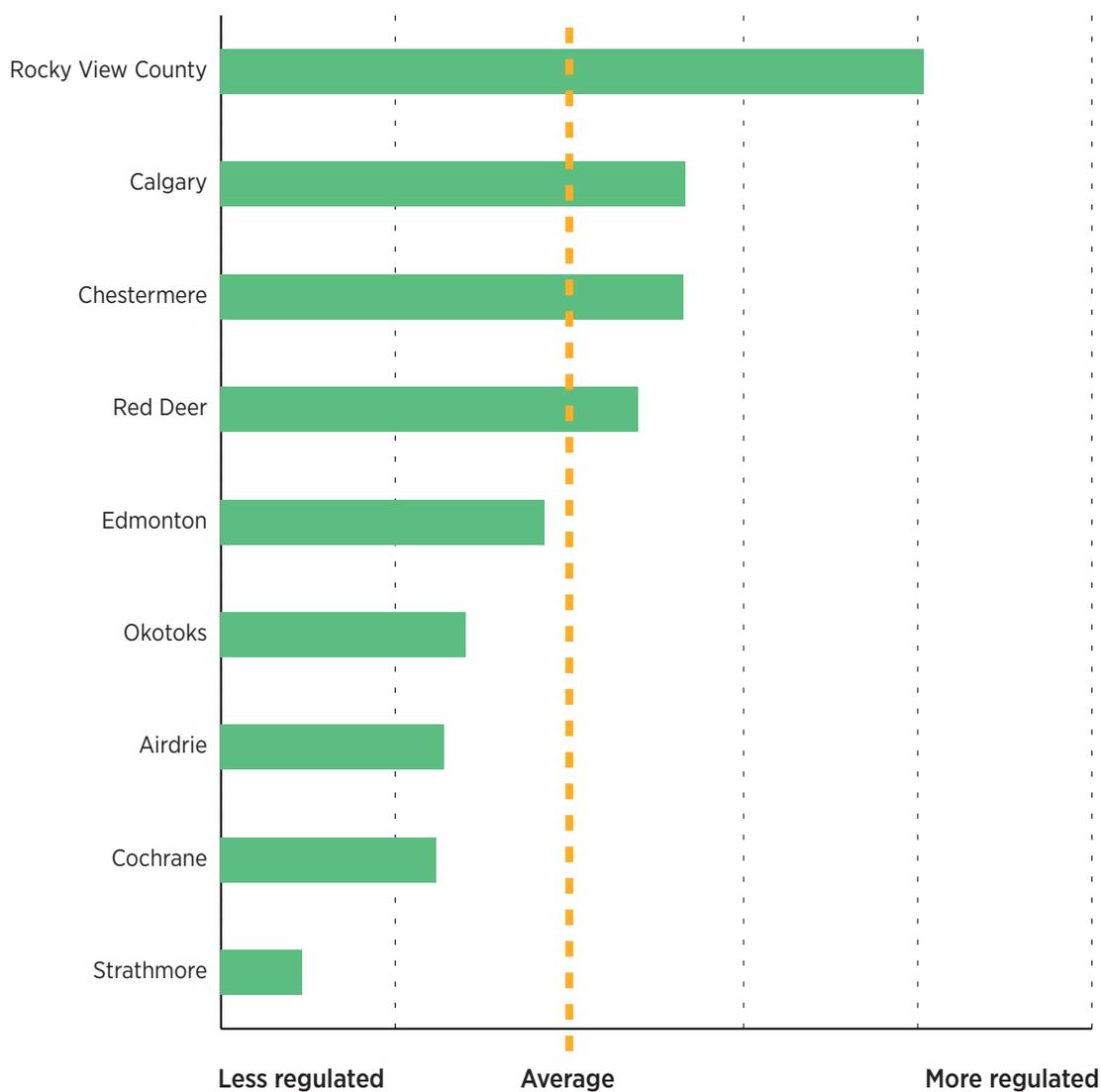
Reported compliance costs and fees add up to a low of \$12,600 per home built in Strathmore and a high of \$33,333 per home in Rocky View County. Calgary and Edmonton rank closer to the regional average: reported compliance costs for Calgary are \$24,429 per new home; for Edmonton, \$22,813.

The survey reports that properties need to be rezoned to accommodate more than 50% of new residential development in all but one city (High River). Estimates of rezoning's effect on approval timelines range from under a month in Red Deer to 14.7 months in Rocky View County.

Opposition from the Council and community to residential development is perceived as strongest in cities where dwelling values are highest, raising questions about the causes and consequences of local resistance to new housing. The strongest opposition is reported in Rocky View County. In Calgary, where our survey suggests the next strongest impact of opposition is found, detached homes tend to be reported as more affected by controversy than new multiple-dwelling development. Council and community are typically not perceived as a deterrent to building in Strathmore, Cochrane, and Edmonton.

The publication provides a summary index of residential land-use regulation that is calculated by tallying across five key components of regulation’s impact—Approval Timelines, Cost and Fees, Council and Community, Timeline Uncertainty, and Rezoning Prevalence—in the nine cities that generated sufficient survey responses. This index ranks Strathmore as the least regulated and Rocky View County as the most. Calgary comes in below average in all categories except for the frequency of rezoning and is the second most-regulated city ranked overall, while Edmonton ranks closer to the regional average.

### Composite Index of Residential Land-Use Regulation in nine cities in Calgary-Edmonton Corridor



# 1 Introduction

As an increasing number of Canadians move to major cities,<sup>1</sup> housing prices have continued to rise. This makes it important to understand how public policy might affect the supply of new homes. Evidence from the United States suggests that land constraints are increasingly important factors in determining differences in the supply of new housing, and price growth (see Saiz, 2010 and Saks, 2008 for examples). Systematic comparisons of land-use regulations across Canadian cities can help identify where they are cost-effective and efficient, and where these regulations burden local economies and aspiring homeowners.

The Calgary-Edmonton Corridor (CEC) encompasses the Calgary and Edmonton metropolitan areas (adding the Okotoks, High River, and Strathmore agglomerations), as well as Red Deer (**figure 1**). This region, home to Alberta's three largest urban centres and 69% of its population as of the 2011 census, is confined to the southern half of Alberta, and generally situated along or near Provincial Highway No. 2. Other than the rolling foothills to the south and west of Calgary, the CEC is composed primarily of flat grassland and parkland, presenting little physical impediment to outward urban growth. Despite this, Calgary's housing market has seen prices rise by 111% between January 2005 and January 2015 (MLS, 2015) while consumer prices rose by 25% (Statistics Canada, 2015).<sup>2</sup>

The Fraser Institute has conducted a survey of housing developers and home-builders to assess how residential land-use regulation affects the supply of new housing. The data collected represent the experiences and opinions of industry professionals across Canada. This report presents survey results for cities in the CEC describing the length and uncertainty of approval timelines for residential development projects, compliance costs and fees, how frequently respondents must rezone property, and how they gauge local and political opposition to their projects.

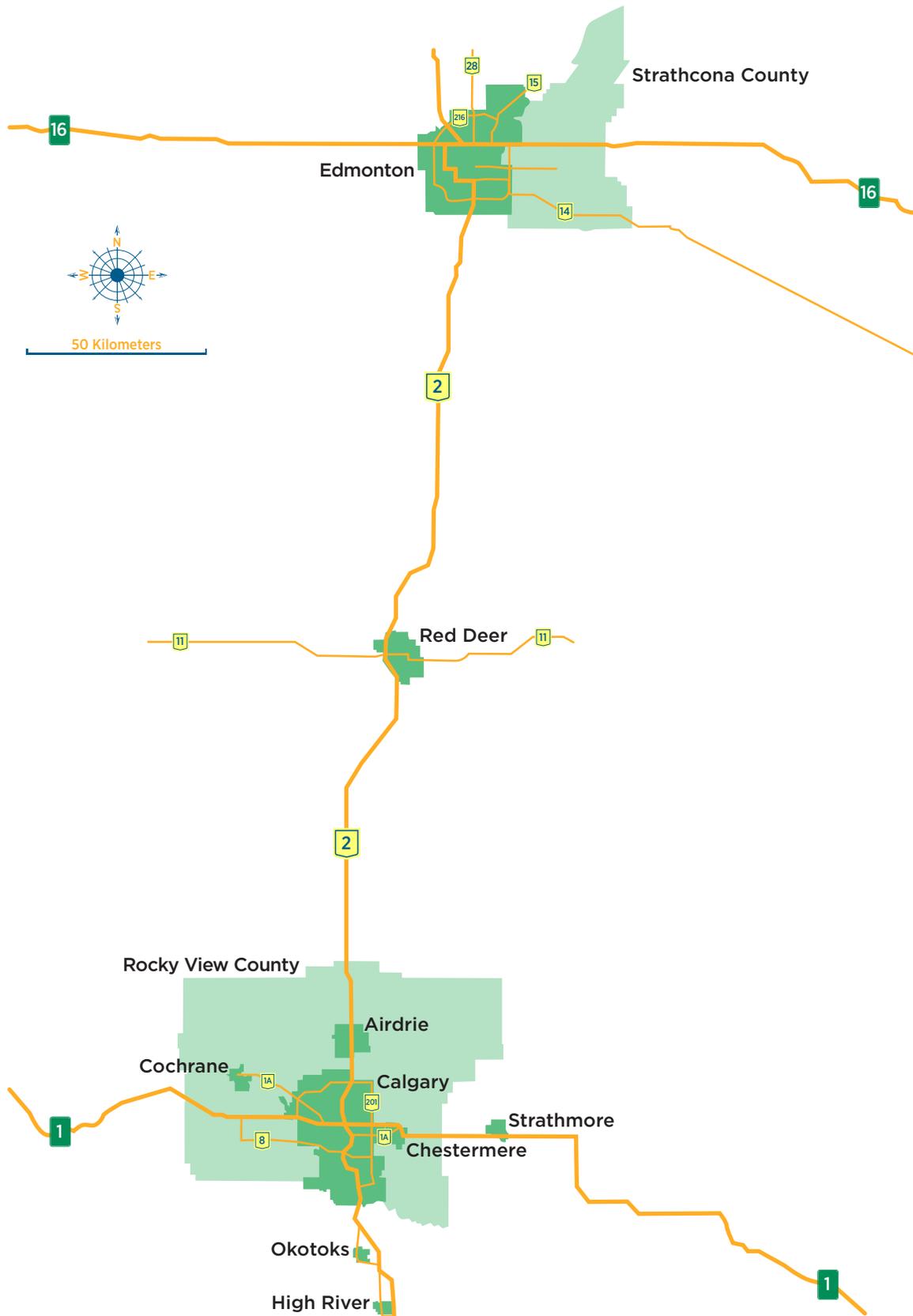
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1. A report from the University of Toronto Cities Center examining the most recent census notes that “[t]he continuing attraction of the largest cities and metropolitan areas, and the economic activities and social networks they support, is perhaps the single most important theme in the latest Census results” (Simmons and Bourne, 2013: 3).

2. Growth in both housing and consumer prices has outpaced that in other regions such as Greater Vancouver, where housing prices rose by 68% and consumer prices by 14%. Similar Multiple Listing Service (MLS) data were not available for other CEC cities.

The Fraser Institute's Survey of Land-Use Regulation continues work done in the United States, developing insights into policy outcomes in Canadian cities. Recent US work that inspired this survey includes Gyourko, Saiz, and Summers (2008), who conducted a nationwide survey measuring these regulatory processes and their outcomes. Another series of surveys was used to understand land-use regulation in the San Francisco Bay Area, incorporating perspectives of city officials and residential developers (Calfee et al., 2007; Quigley, Raphael, and Rosenthal, 2008). For a more in-depth exploration of research into regulation's economic impacts, see Green, Herzog, and Filipowicz (2015).

**Figure 1: Calgary-Edmonton Corridor (CEC) cities studied**



## 2 The Data

### 2.1 Survey questionnaire

The Fraser Institute's Survey of Residential Land-Use Regulation was designed to capture key insights into residential development and building professionals' experiences with land-use regulation. Its design is an extension of work by Calfee and colleagues (2007), whose work included a survey of planning officials. We have modified their methods to form a stand-alone survey of residential developers and home builders describing land-use regulation. Respondents were directed to focus on municipalities, and types of residential development, with which they were familiar, giving accounts of:

- the typical length and uncertainty of approval timelines;
- typical regulatory compliance costs and fees;
- the role of politicians and community groups in residential development;
- the effects of zoning bylaws and official plans.

Responses were measured on scales that reflect directly measurable outcomes where possible (months, dollars, or proportion of projects affected), and clearly labeled five-point scales otherwise. We distinguish single-family, clearly defined as single detached homes, from multiple dwelling developments, which we specify as including townhouse, semi-detached, and apartment units<sup>3</sup>—consistent with the definition of the Canada Mortgage and Housing Corporation (CMHC, 2014). The survey was administered electronically and distributed through developer and homebuilder trade associations. For a list of survey questions, see [Appendix 4](#) (p. 34).

### 2.2 Survey response and the sample

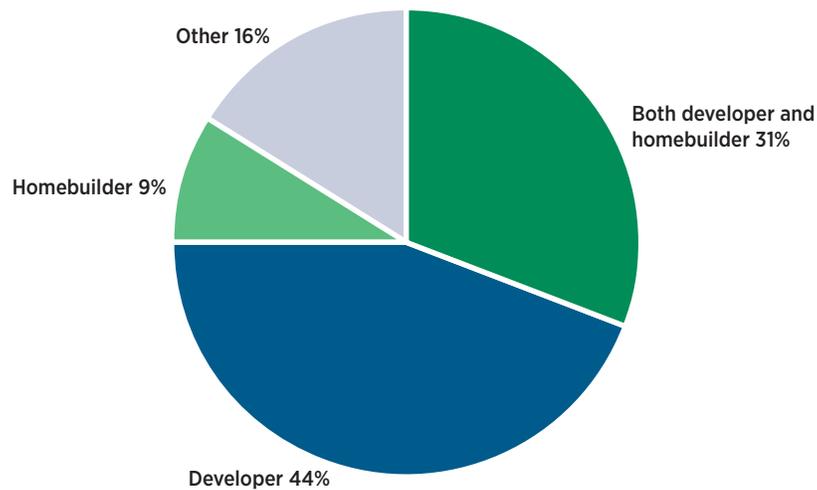
The survey was conducted in the Fall of 2014, and distributed primarily through industry associations. The regulatory data used in this report were obtained from 32 respondents in the CEC. The average respondent answered questions for 3.66 cities. Although respondents' identities are not known, their answers generated

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3. High-rise condominiums are included in the category of multiple dwelling developments.

a range of results that is similar to other reports on the residential development process in the CEC.<sup>4</sup> **Figure 2** illustrates that the majority of survey respondents identified in this sample describe themselves as either developers and homebuilders, or solely developers;<sup>5</sup> the “other” category is largely made up of engineering firms. **Figure 3** shows that most survey respondents work on both single-family and multiple-dwelling developments.

**Figure 2: Respondents from the Calgary-Edmonton Corridor to the Survey of Residential Land-Use Regulation, by profession (%)**



Note: Homebuilder or developer refers to a respondent who falls in one category but not the other. Many firms do several related types of work, but these two broad categories are useful for understanding the industry.

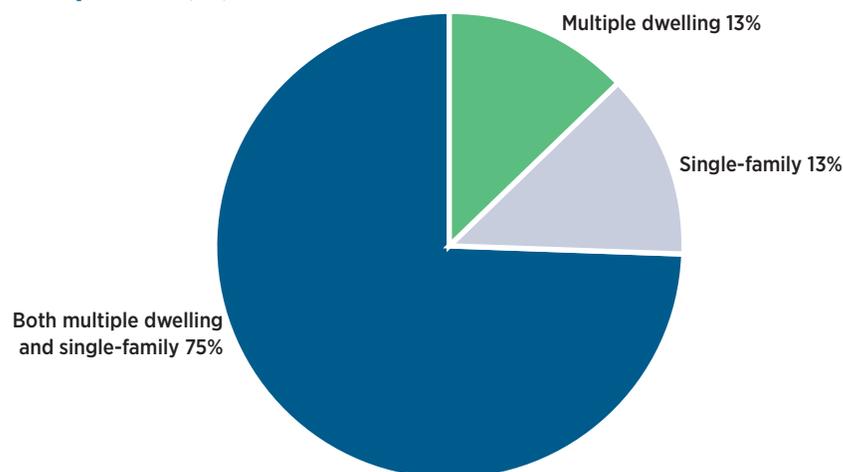
Other includes development planning, Engineering, Architecture, and unspecified.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

4. The 2012 *Canada-Wide Development Process Survey Report* by the Real Property Association of Canada (REALpac) produced a similar range of per-unit costs and average approval timelines. However, our results are not directly comparable to REALpac's findings as we collect less detailed, but nationally comparable, data focusing on average total compliance costs and approval timelines, while the *Canada-Wide Development Process Survey Report* focuses on the specific fees and timelines associated with individual development application steps (e.g. zoning by-law amendments, plans of subdivision, and city plan amendments) in key cities.

5. The terms “developer” and “homebuilder” are not universally defined, and share a degree of overlap. However, they are considered distinct professions by the Canadian Home Builders' Association (2011), and the Building Industry and Land Development Association, among others. In general, homebuilders are primarily concerned with the construction of new housing but may also include renovators and contractors. Developers are primarily responsible for the servicing and subdivision of land. Many firms conduct both of these roles.

**Figure 3: Respondents from the Calgary-Edmonton Corridor to the Survey of Residential Land-Use Regulation, by type of development (%)**



Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

This report presents several measures of regulation based on the survey data. We do not report results for categories based on fewer than three responses, and we indicate where they are based on fewer than five. The number of cities presented in each section of our analysis varies alongside the number of responses to each question in our survey. Each figure presented in this study includes a regional average. This average is calculated across all responses from the CEC, rather than across cities. Since results are suppressed in cities with few respondents, the regional average of each indicator generally will not coincide with the average of city-level indices presented.

Without knowing the market shares of companies responding to the survey it is difficult to calculate a meaningful response rate. For example, if one developer represents 60% of new home building in one city, that developer's response is arguably more significant than all other responses from that city combined.<sup>6</sup> Our survey does not account for scale.

**Table 1** reports characteristics of cities described in this report; all data are from 2011, the most recent census year. Calgary and Edmonton are Alberta's two most populous cities, accounting for the vast majority of the population in the CEC

<sup>6</sup> Conversely, one can speculate that it may be difficult for a new developer or homebuilder to compete successfully against incumbents, who know the nuances of each city's regulatory process. If this is true, more highly regulated cities would have fewer developers (each with a large market share) and the experiences of smaller firms are important.

**Table 1: City characteristics as of the 2011 census**

	Population	Land Area (km <sup>2</sup> )	Single detached dwellings (%) <sup>1</sup>	Median dwelling value (\$) <sup>2</sup>	Median commute time (minutes) <sup>3</sup>	Most common place of work and percentage of commuters
Calgary	1,096,833	825	59%	\$400,697	25.1	Calgary
Airdrie	42,564	33	72%	\$349,008	25.5	
Rocky View County	36,461	3,885	93%	\$848,342	30.2	
Okotoks	24,511	19	77%	\$399,369	25.7	
Cochrane	17,580	30	69%	\$401,165	26	
Chestermere	14,824	33	84%	\$490,386	25.8	
Edmonton	812,201	684	51%	\$349,154	20.7	Edmonton
Strathcona County	92,490	1,181	83%	\$421,275	20.9	
High River	12,920	14	53%	\$331,078	15.4	within city
Red Deer	90,564	104	54%	\$300,745	15.3	
Strathmore	12,305	27	65%	\$303,222	15.8	

Notes: 1. Percentage of occupied private dwellings. The census defines single detached dwellings as those with open space on all sides, and no dwellings either above or below. 2. Dwelling values refer dollar amount (in CA\$2011) expected by the owner if the dwelling were to be sold. Reported for owner-occupied, non-farm dwellings. 3. Commute times refer to how many minutes it took for a person to travel from home to work. Reported for individuals age 15 years and older in private households who worked at some time between January 1, 2010 and May, 2011. Typically refers to place of employment and residence at the time of the survey.

Sources: Statistics Canada, 2013a, 2013b, 2012; authors' calculations.

and just over half the province's population in 2011. In both cities, single detached dwellings represent the majority of occupied housing stock: in Calgary, 59% and in Edmonton, 51%. This is also the case in surrounding communities, where single detached dwellings range from 53% of the occupied stock in High River to 93% in Rocky View County. Although Edmonton is smaller than Calgary (and slightly less dense in terms of residents per km<sup>2</sup>), its housing stock has a higher share of multiple-dwelling homes.

Based on commuting patterns, Edmonton and Strathcona County appear relatively integrated: 35% of Strathcona commuters work locally. Red Deer—which sits along the main highway connecting the Edmonton and Calgary metropolitan areas—is uniquely isolated.

Calgary was the most popular commuting destination for residents of Calgary, Airdrie, Rocky View County, Okotoks, Cochrane, and Chestermere (the first six cities listed in table 1). Despite differences among these cities in the percentage of single detached houses and the median value of dwellings, it is useful to think of them as common homes for those working in this region's core. Okotoks is not officially considered part of Calgary's metropolitan area by Statistics Canada, but over half of Okotoks commuters work in Calgary—significantly outnumbering the 38% who work within its borders.

While Strathmore and High River commuters tend to work locally, these cities have significant links with Calgary (where 38% of Strathmore commuters and 25% of High River commuters work). Barring Rocky View County, median dwelling values across Calgary-area cities are remarkably similar, suggesting that their neighbourhoods present good substitutes for one another.<sup>7</sup>

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7. Chestermere's relatively high median dwelling value may be a function of its low density (454 residents per km<sup>2</sup> compared to 1,274 per km<sup>2</sup> in Okotoks) and proliferation of single-family homes, indicating that the median dwelling may sit on a large lot.

## 3 Survey Results

### 3.1 Approval timelines

Survey respondents were asked to estimate approval timelines for standard single-family and multiple-dwelling projects that do and do not require rezoning (a process described in section 3.4). Between one and four timeline entries per city are recorded for each respondent, depending on the types of work done in each city. For each type of work, respondents were asked to select one of 7 ordered choices: 2 months or less, 3 to 6 months, 7 to 10 months, 11 to 14 months, 15 to 18 months, 19 to 23 months, and 24 months or more.

The Approval Timeline Index (ATI) is the city average of survey respondents' timeline estimates. To calculate this average, each bin was assigned its midpoint,<sup>8</sup> and respondents that input a timeline of three or more years were omitted from the Approval Timeline Index. Only one such outlier was removed from the sample discussed here.

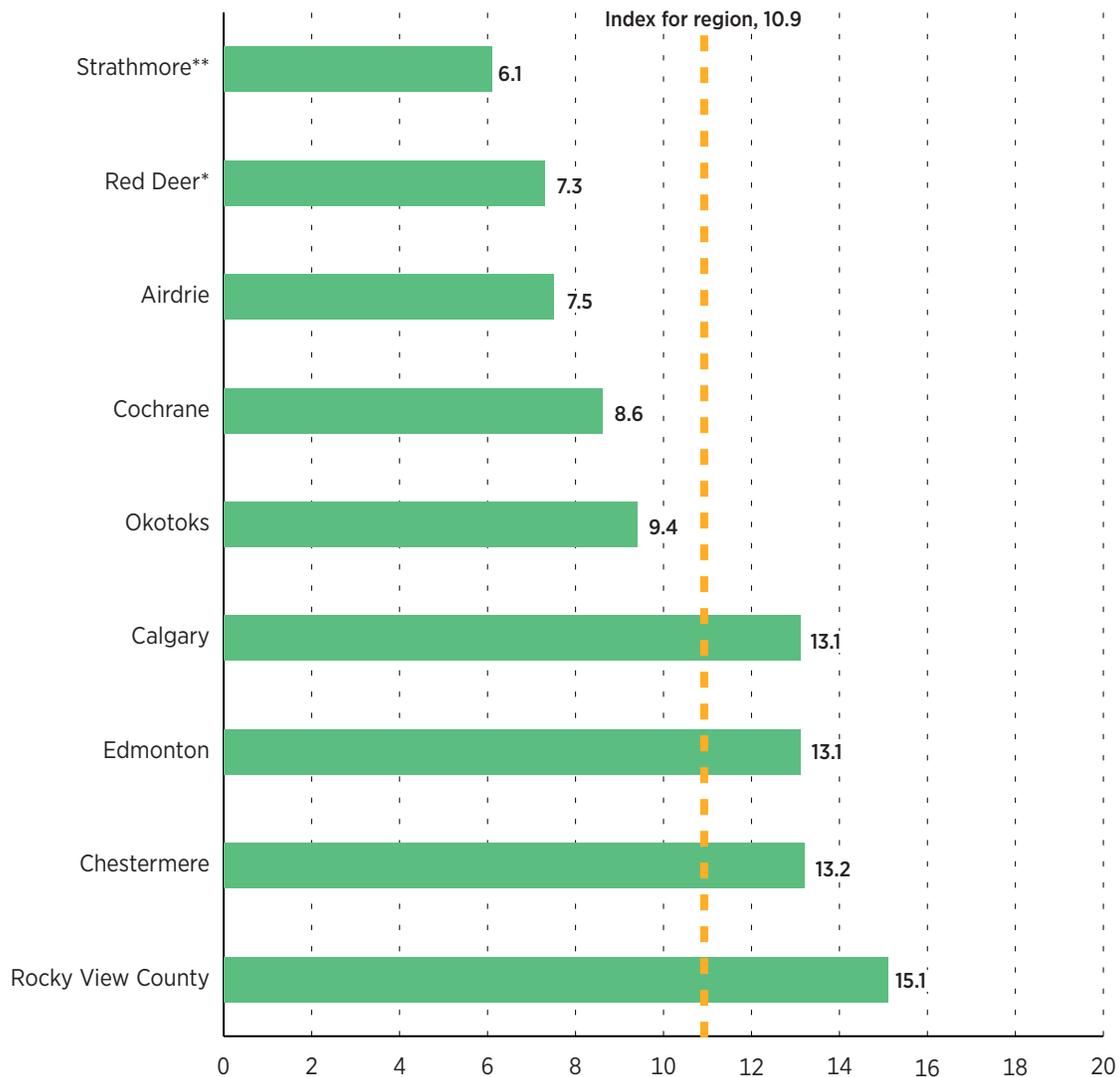
The nine cities represented in [figure 4](#) appear divided between two groups, with the first five cities ranging from 6 to 10 months, and the bottom four cities ranging between 13 and 16 months. Very similar typical approval timelines and the same average (13.1 months) were reported for Calgary and Edmonton. Rocky View County is reported to take over twice as long as Airdrie—which it surrounds—to issue approvals. Additional measures of approval timelines, broken down by housing type (single-family or multiple dwelling) and by projects requiring rezoning compared to those not requiring rezoning, are presented in [Appendix 2](#) (p. 28).

The Approval Timeline Index is influenced by the type of project done by survey respondents, which varies across cities. For example, the ATI for Rocky View County (which uses data from six unique respondents) is based mostly on accounts of single-family development, since only two of these respondents described the approval process for multiple-dwelling development in this city (interestingly, no responses estimate a timeline for multiple-dwelling projects that do not require rezoning). The ATI is deliberately constructed this way, to represent the average approval timeline for typical housing developments in each city.

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8. Timelines in months were assigned to bins as follows: 2 months or less is taken as 1 month, 3 to 6 months is taken as 4.5 months, 7 to 10 months is taken as 8.5 months, 11 to 14 months is taken as 12.5 months, 15 to 18 months is taken as 16.5 months, 19 to 23 months is taken as 21 months, and 24 months or more is taken as 28 months unless the respondent opted to input a timeline estimate (which the survey encouraged, but was not always done).

**Figure 4: The Approval Timeline Index for the Calgary-Edmonton Corridor—typical approval timeline, in months**



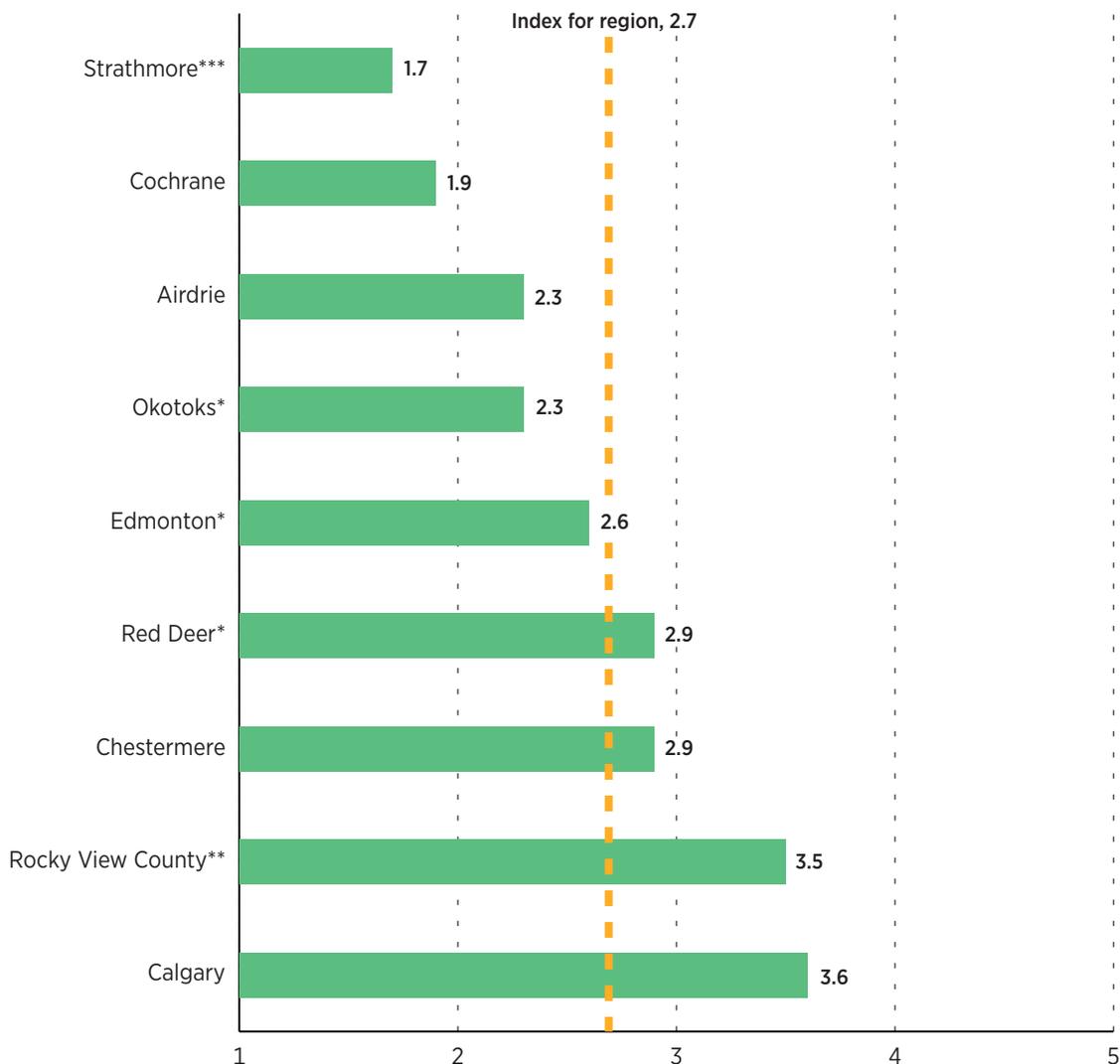
Note: \*\*\* = 3 responses; \*\* = 4 responses; \* = 5 responses.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

### 3.2 Timeline uncertainty

In addition to the average approval time for a project, developers may also take the variation of approval times into account when considering projects. To assess the effect of timeline uncertainty in each city, we asked developers how this uncertainty affects both multiple-dwelling and single-family development in each city. Responses are measured on a five-point scale: [1] Encourages development; [2] Not a deterrent to development; [3] Mild deterrent to development; [4] Strong deterrent to development; and [5] Would not pursue development due to this factor. The Timeline Uncertainty Index is the average response to this question in each city (figure 5).

**Figure 5: The Timeline Uncertainty Index for development in the Calgary-Edmonton Corridor**



Note: \*\*\* = 3 responses; \*\* = 4 responses; \* = 5 responses.  
 Scale: [1] Encourages development; [2] Not a deterrent to development; [3] Mild deterrent to development; [4] Strong deterrent to development; and, [5] Would not pursue development due to this factor.  
 Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

Uncertainty about timelines appears to be a relatively mild deterrent to development in many CEC municipalities. Notable exceptions to this generalization are Rocky View County and Calgary—both in the mild-to-strong deterrent range with TUI ratings above 3—and Strathmore and Cochrane, which are perceived as not deterring development.

Approval timelines are an important component of established measures of residential land-use regulation (Gyourko, Saiz, and Summers, 2008; Quigley,

Raphael, and Rosenthal, 2008). Long and uncertain approval timelines can make the supply of new housing less responsive to demand, with negative consequences for anyone looking to enter the market (see Green, Herzog, and Filipowicz, 2015 and Mayer and Somerville, 2000 for a more detailed discussion).

### 3.3 Compliance costs and fees

We asked respondents to estimate the sum of regulatory compliance costs and fees accrued per dwelling unit built for standard single-family and multiple-dwelling projects.<sup>9</sup> The survey offered seven ordered choices: Less than \$1,000 per unit; \$1,000 to \$9,999 per unit; \$10,000 to \$19,999 per unit; \$20,000 to \$34,999 per unit; \$35,000 to \$49,999 per unit; \$50,000 to \$75,000 per unit; and more than \$75,000 per unit. Respondents had the option to specify a cost if they selected the highest bin, but this option was not exercised in the CEC.

The Cost and Fees Index (CFI) is the city average of survey respondents' compliance costs and fee estimates. To calculate this average, each bin was assigned its midpoint,<sup>10</sup> except for the top bin, which was assigned \$82,500.

**Figure 6** shows CFI ratings in the nine CEC municipalities where we have enough data to measure regulatory costs of residential development reliably. The majority of cities, including Calgary and Edmonton, fall within the range of \$19,000 to \$25,000 per dwelling. The strongest variation is between Strathmore, with a CFI rating of \$12,600, and the nearby municipalities of Chestermere (\$28,056) and Rocky View County (\$33,333). Rocky View County, which occupies the space between Airdrie and Calgary, imposes regulatory costs that are over \$10,000 more per unit built than in Airdrie. This may be related to the relatively high value of dwellings in Rocky View County (see table 1), although the nature of this relationship is unclear.

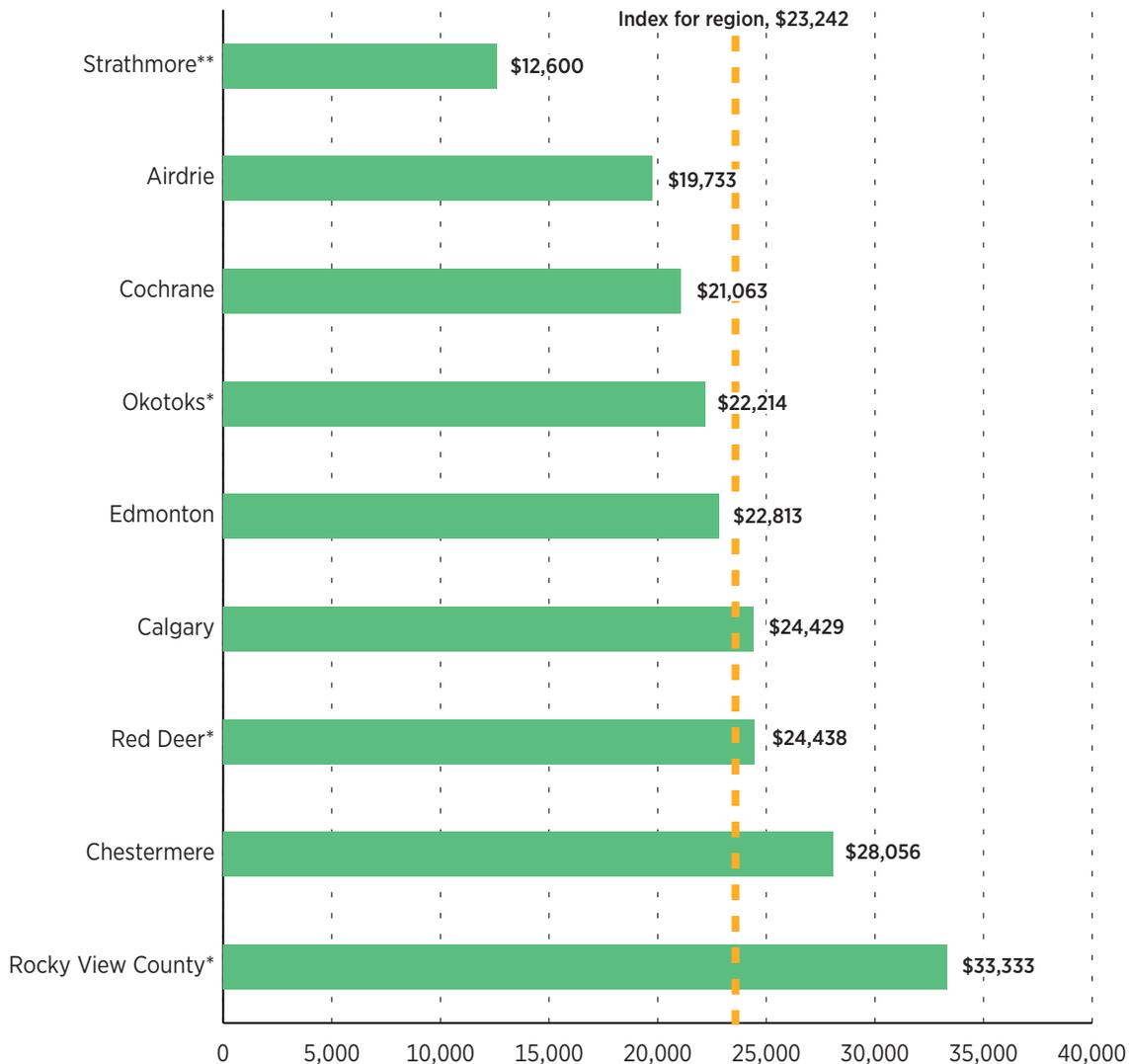
Further, Green, Herzog, and Filipowicz (2015) show that trends in regulatory costs across Canada are the opposite of what one would expect if the CFI measures reasonable servicing costs. Instead, the data suggest that intensifying cities—those who have grown by building up instead of out—often have regulatory frameworks that are costly to navigate.

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**9.** Specifically, we asked for estimates of the cost (per dwelling unit) of the project approval and regulatory compliance process in each city. The survey specified that this includes all administration, processing, and direct compliance costs. **Appendix 4** (p. 34) presents the exact wording of the survey questionnaire.

**10.** Costs and fees in dollars per dwelling unit built were assigned to bins as follows: Less than \$1,000 per unit is taken as \$500; \$1,000 to \$9,999 per unit is taken as \$5,000; \$10,000 to \$19,999 per unit is taken as \$15,000; \$20,000 to \$34,999 per unit is taken as \$27,500; \$35,000 to \$49,999 per unit is taken as \$42,500; \$50,000 to \$75,000 per unit is taken as \$62,500; and More than \$75,000 per unit is taken as \$82,500.

**Figure 6: The Cost and Fees Index for the Calgary-Edmonton Corridor—typical regulatory cost, \$ per dwelling unit**



Note: \*\*\* = 3 responses; \*\* = 4 responses; \* = 5 responses.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

### 3.4 Rezoning

The need to change zoning bylaws can affect approval timelines and regulatory costs. In general, zoning bylaws “[state] exactly: how land may be used; where buildings and other structures can be located; the types of buildings that are permitted and how they may be used; [and] the lot sizes and dimensions, parking requirements, building heights and setbacks from the street” (Ontario Ministry of Municipal Affairs and Housing, 2010).<sup>11</sup> It is difficult to accurately measure the impact of zoning on the housing supply; we cannot observe how a city would grow without its current regulation. The prevalence of rezoning (the process of amending the zoning designation assigned to a given parcel) is our most objective measure of zoning’s impact on development.<sup>12</sup>

Our survey asked respondents whether they rezone property. Those who do were asked to estimate how frequently their multiple-dwelling and single-family projects require rezoning in each city by selecting one of five bins: Never; Rarely (about 25% of projects); Sometimes (about half of projects); Frequently (about 75% of projects); and Always. The Rezoning Index is the average percentage of respondents’ projects estimated to require rezoning in each city.<sup>13</sup> It is reported in [figure 7](#) and broken down by development type where possible in [Appendix 3](#) (p. 32).

For the average respondent doing business in the Calgary-Edmonton Corridor, 65% of development requires rezoning,<sup>14</sup> above the average of 59% in the rest of Canada.<sup>15</sup> Our survey also suggests that only a quarter of projects in High River require rezoning, while the majority of cities have closer to two thirds of reported development requiring rezoning. A high of 81% of projects is reported in Red Deer, followed by 80% in Rocky View County.

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**11.** This definition was selected for its brevity and its broad applicability. More detailed definitions of zoning as practised in Edmonton and Calgary are available on these municipalities’ websites at the time of this report (see City of Edmonton, 2015; City of Calgary, 2015).

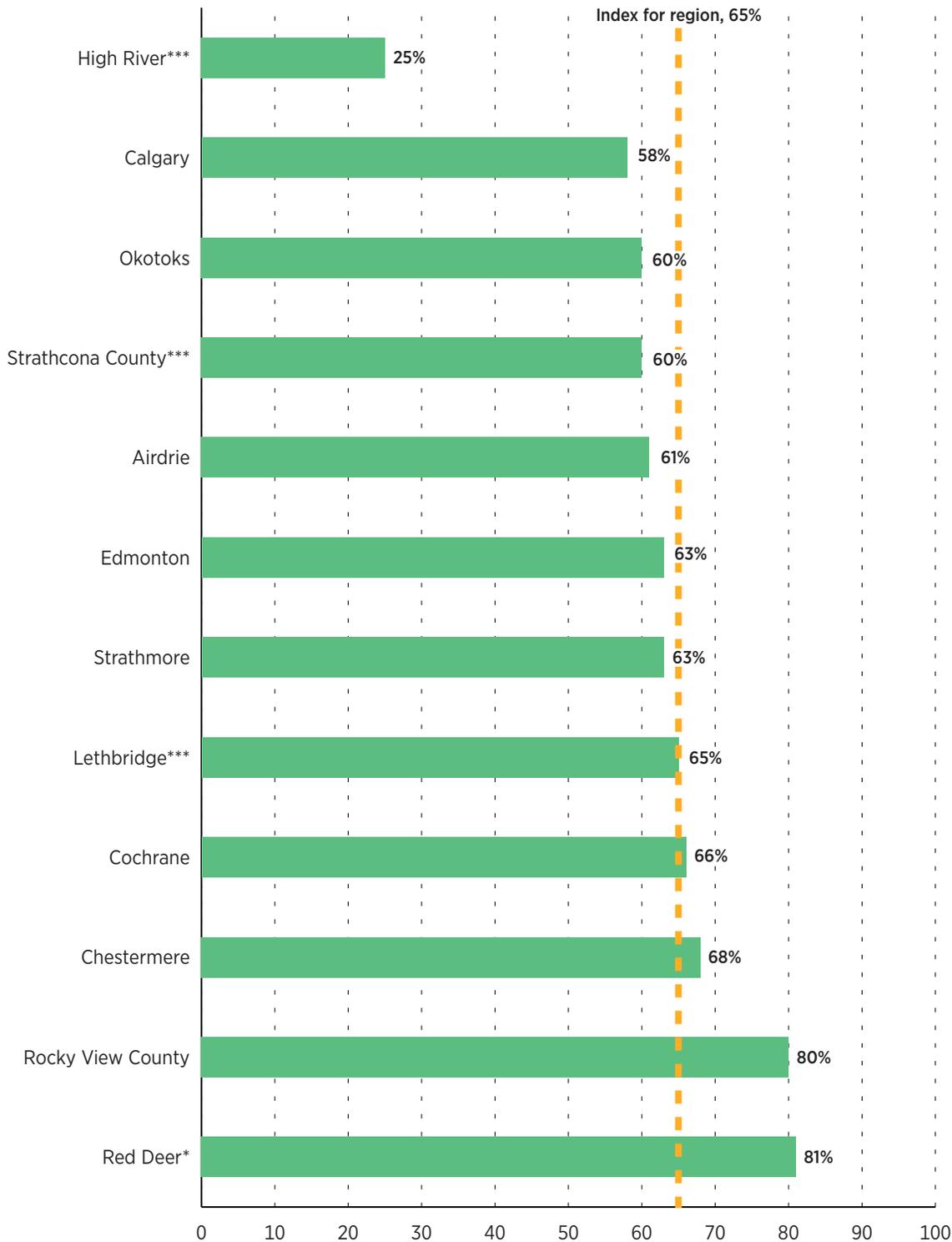
**12.** Conceptually, the prevalence of rezoning measures how compatible land-use regulation is with demand by counting the proportion of building done by survey respondents that requires amendment to existing zoning regulation. This measure does not capture zoning’s ability to prevent externalities; it indicates the amount of land with zoning regulation that developers and city planners have agreed to change.

**13.** To compute the rezoning index, survey responses were coded as follows: never or indicated that respondent does not rezone land is taken as 0; rarely (about 25% of projects) is taken as 25%; sometimes (about half of projects) is taken as 50%; frequently (about 75% of projects) is taken as 75%; and always is taken as 100%.

**14.** This average is calculated across all responses in the CEC (not across cities), and includes responses for cities not listed in [figure 8](#).

**15.** This figure remains at 60% of development if the CEC is included.

**Figure 7: The Rezoning Index for the Calgary-Edmonton Corridor—percentage of residential development requiring rezoning**



Note: \*\*\* = 3 responses; \*\* = 4 responses; \* = 5 responses.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

Survey respondents who describe approval timelines both with and without rezoning allow us to estimate the average effect of the rezoning process on approval timelines. We do this by calculating the differences in these timelines for each respondent in each city, then averaging across responses.<sup>16</sup> Preliminary data from across Canada suggest that, for the average developer outside of the CEC, rezoning adds 4.7 months to a typical project's approval timeline.<sup>17</sup> In the CEC, this average increases to 5.4 months, increasing the incentive to avoid rezoning.

**Figure 8** presents the estimated effect of each city's rezoning process on the time needed to approve standard residential developments. Rocky View County adds over 14 months to approval timelines because of the rezoning process. Chestermere adds just under 10 months, the second-longest effect. Rocky View County's long timeline additions are accentuated by a high incidence of rezoning, which according to our survey affects 80% of development (compared to Chestermere's 68%). Respondents in Red Deer report a very low impact from rezoning, at less than one month. This is important as figure 7 indicates that 81% of residential development projects in Red Deer are reported to require rezoning.

### 3.5 Council and community

We asked developers how local council and community groups affect single-family and multiple-dwelling development. Responses are measured on a five-point scale: [1] Encourages development; [2] Not a deterrent to development; [3] Mild deterrent to development; [4] Strong deterrent to development; and [5] Would not pursue development due to this factor. The Council and Community Index (CCI) is the average response to these questions for each city (**figure 9**).

The strongest council and community opposition to new housing projects is reportedly concentrated in Calgary and Rocky View County, while Edmonton and the two Calgary-area cities of Strathmore and Cochrane present the least. While not many cities are reported as presenting a strong deterrent to development on average, no city shows a tendency to encourage development.

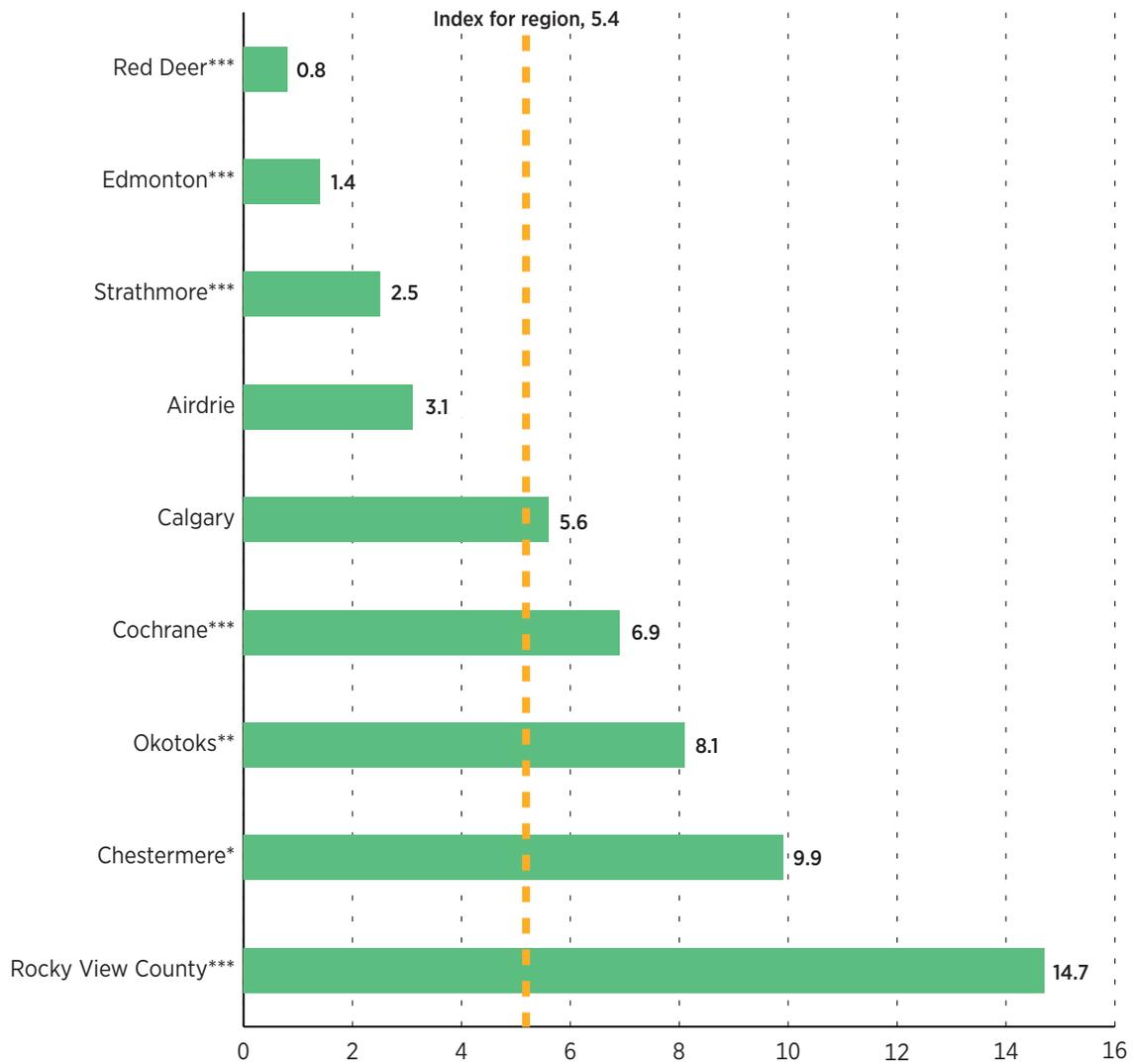
Some suggest that incumbent homeowners have an incentive to block new development, restricting the housing supply and increasing the market value of property. Hilber and Robert-Nicoud (2013) formalize this argument, predicting that owners of developed land will favour stringent land-use regulation. Turning to data

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**16.** Differences between timelines with and without rezoning are calculated for every survey respondent in each city, separately for single-family and multiple-dwelling developments. Data from surveys without a response for either rezoning or non-rezoning timelines for a particular dwelling type and city are dropped. This statistic is only reported in cities where at least three respondents describe timelines with and without rezoning for either dwelling type.

**17.** The national average effect of rezoning on approval timelines is 4.74 months when the CEC is included.

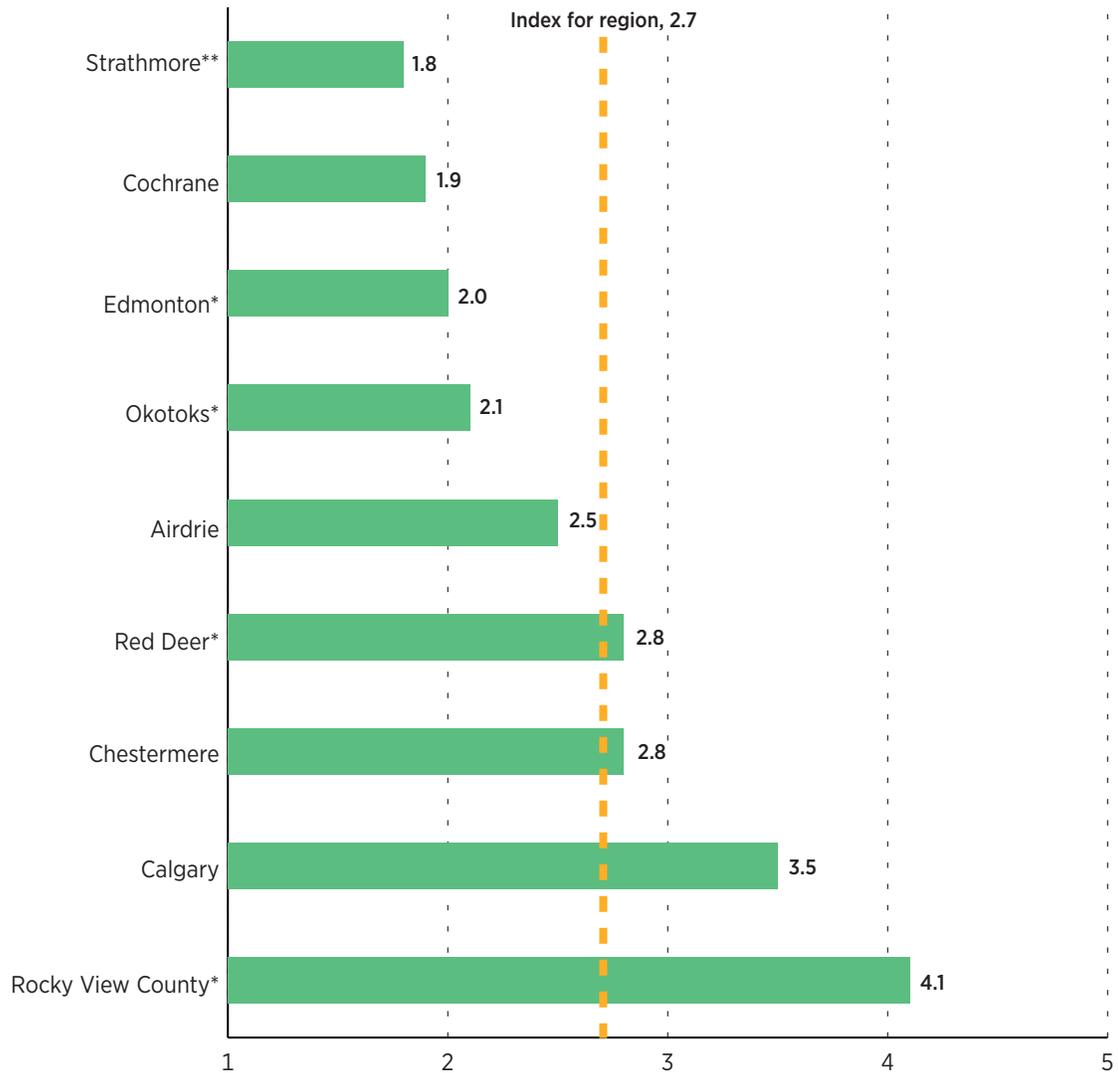
**Figure 8: The effect of the rezoning process on approval timelines in the Calgary-Edmonton Corridor, city-level averages in months**



Note: \*\*\* = 3 responses; \*\* = 4 responses; \* = 5 responses.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

**Figure 9: The Council and Community Index for the Calgary-Edmonton Corridor**



Note: \*\*\* = 3 responses; \*\* = 4 responses; \* = 5 responses.

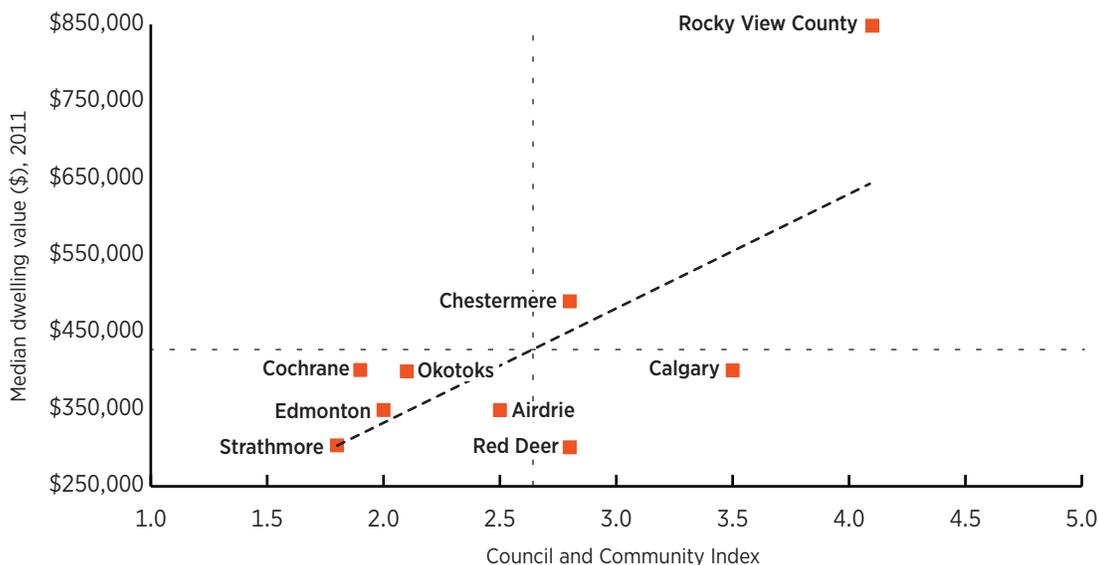
Scale: [1] Encourages development; [2] Not a deterrent to development; [3] Mild deterrent to development; [4] Strong deterrent to development; and, [5] Would not pursue development due to this factor.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

gathered from American metropolitan areas, the authors find a positive relationship between the share of developed land in 1992 and a measure of regulation in 2005; this evidence for their theory is supported by several statistical techniques.<sup>18</sup> To the extent that this effect also occurs in Canada, it can be measured by the CCI.

Figure 10 shows that the CCI is positively correlated with dwelling values reported to the 2011 National Household Survey (with a correlation coefficient of 0.748).<sup>19</sup> While this relationship is not necessarily causal—other factors such as

**Figure 10: Council and Community Index and 2011 dwelling values (\$) in the Calgary-Edmonton Corridor**



Notes: **1.** The correlation coefficient between the CCI and city level median dwelling values is 0.639 and the trend line is fit by ordinary least squares. **2.** The vertical and horizontal dotted lines indicate the mean values of each axis.

Sources: Statistics Canada 2013a; Fraser Institute Survey of Land-Use Regulation, authors' calculations.

**18.** Hilber and Robert-Nicoud (2013) estimate the effect of the historical share of developed land and the home-ownership rate on current measures of regulation by two-stage least squares, using coastal access and the percentage of households with married couples and no children as instruments. In addition to a strong effect of developed land on regulation, Hilber and Robert-Nicoud find mixed evidence that past home-ownership rates have led to more intense land-use regulation in the United States. The authors also control for household wages, population density, the Democratic Party's vote share, and regional effects.

**19.** The OLS regression line shown has a slope indicating a \$160,046 increase in dwelling-values ratings for a one-point increase in the CCI. Removing Rocky View County, which is a high outlier in dwelling values and the CCI, the correlation coefficient becomes 0.309 and the OLS slope indicates that the increase in dwelling value drops to \$32,904. Because of the small sample, and heteroskedasticity driven in part by Rocky View County, we do not discuss the statistical properties of the OLS regression.

attractive neighbourhood amenities may be driving both the CCI and dwelling values—it is difficult to rule out the hypothesis that homeowners may deter residential development to increase their property values.

### 3.6 Opposition to density

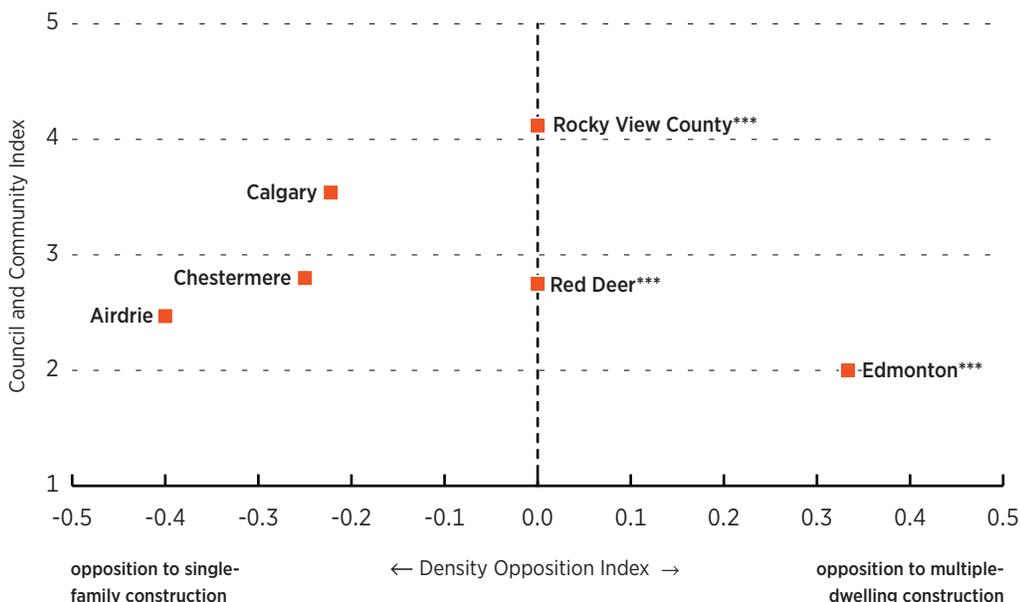
While the CCI reflects differences in the magnitude of opposition's reported effect on development across cities, it does not describe differences within cities. This effect likely varies between dwelling types. City councils and community groups who perceive a high cost of sprawling outward growth might have an adverse effect on single-family development, while those who prefer to preserve the character of established neighbourhoods or maintain high property values might affect multiple-dwelling development.

Survey respondents who separately rate the effect of local council and community groups on single-family and multiple-dwelling development allow us to infer which faces stronger opposition. We do this by calculating the differences in these ratings for each respondent in each city, then averaging across responses.<sup>20</sup> The Density Opposition Index is positive in cities where survey respondents report that multiple-dwelling development faces more opposition than single-family, and negative where the opposite is true. A rating of negative one would indicate that the average respondent reports one-point stronger opposition to single-family than multiple-dwelling development (for example, single family may be rated as facing a strong deterrent while multiple dwelling faces a mild one).

**Figure 11** shows the Density Opposition Index on the horizontal axis, against the CCI on the vertical axis. The dotted line indicates neutral reports of opposition to single-family and multiple-dwelling development, the right side of the plot indicates stronger opposition to multiple-dwelling development and the left indicates stronger opposition to single-family development. Edmonton is the only city where there is a tendency to report that council and community favour single-family development, although its low CCI value (2, indicating that this factor is not a deterrent to development) makes this bias less relevant. Calgary's survey

<sup>20</sup> For every survey respondent in each city, the rating of council and community groups' effect on single-family development is subtracted from the multiple-dwelling rating. Data from surveys without a response for either single-family or multiple-dwelling development for a particular city are dropped. This statistic is only reported in cities where at least three respondents describe council and community groups' effect on both dwelling types. Its calculation is facilitated in this sample by the prevalence of respondents who work on both multiple dwelling and single-family homes. A Density Opposition Index was not included in Green, Herzog, and Filipowicz (2015) because there was little single-family development in British Columbia's Lower Mainland.

**Figure 11: Council and Community Index and Density Opposition Index in the Calgary-Edmonton Corridor**



Note: \*\*\* = 3 responses; \*\* = 4 responses; \* = 5 responses.

Sources: Statistics Canada 2013a; Fraser Institute Survey of Land-Use Regulation, authors' calculations.

respondents tend to report that single-family development faces more opposition, and that this opposition is typically quite strong. Rocky View County shows the strongest opposition in general, but it is not skewed against any particular form of housing.

In a similar fashion to the question on council and community opposition, we asked developers to gauge the impact of official city planning objectives and zoning bylaws on residential development. As shown in [Appendix 2](#) (p. 28), the results gathered for the Calgary-Edmonton Corridor were almost perfectly correlated with the CCI and will not be discussed here.

## 4 An Index of Residential Land-Use Regulation

In presenting results of the Survey of Residential Land-Use Regulation, we have described many important pathways through which regulation affects the CEC's housing markets. It is useful to have a single measure of land-use regulation, summarizing all of these dimensions so, in this section, we present an Index of Residential Land-Use Regulation for Alberta's Calgary-Edmonton Corridor as a summary statistic of regulation.

We use a common standardization technique to produce our index, which ranks cities by their relative performance on each dimension of regulation. [Appendix 1](#) (p. 26) describes this process in detail. We compute the index of regulation for the nine Albertan cities with at least three survey responses behind each of its components. Thus, our ranking of cities is dependent on the availability of high-quality data for each city.

### 4.1 Results

Condensing our survey-based measures of regulation into a single index has the advantage of creating a data-driven method to rank cities from least to most regulated. The Index of Residential Land-Use Regulation is negative in cities that are less regulated than average and positive in the CEC's most regulated cities. It is presented alongside its component measures of regulation in [table 2](#).

Of the cities ranked, Strathmore tops the Index of Residential Land-Use Regulation. This is driven by good ratings on approval timelines and uncertainty, regulatory costs, and council and community opposition. Rocky View County ranked the lowest, as it scored poorly on all measures.

Of the CEC's two largest cities, Edmonton (fifth) ranks higher than Calgary (eighth). Although the two are similarly ranked on three of the five indicators, their divergence in overall rankings is due primarily to the higher reported impact from council and community opposition, and timeline uncertainty in Calgary.

**Table 2: Index of Residential Land-Use Regulation**

	Approval Timelines	Cost and Fees	Council and Community	Timeline Uncertainty	Rezoning Prevalence	Index
1. Strathmore	6.1	\$12,600	1.8	1.7	63%	-1.53
2. Cochrane	8.6	\$21,063	1.9	1.9	66%	-0.76
3. Airdrie	7.5	\$19,733	2.5	2.3	61%	-0.72
4. Okotoks	9.4	\$22,214	2.1	2.3	60%	-0.59
5. Edmonton	13.1	\$22,813	2.0	2.6	63%	-0.14
6. Red Deer	7.3	\$24,438	2.8	2.9	81%	0.40
7. Chestermere	13.2	\$28,056	2.8	2.9	68%	0.66
8. Calgary	13.1	\$24,429	3.5	3.6	58%	0.66
9. Rocky View County	15.1	\$33,333	4.1	3.5	80%	2.04
Cross-City Average	10.4	\$23,186	2.6	2.6	67%	

Note: The Index of Residential Land-Use Regulation is the standardized sum of its components, rescaled to have a standard deviation of one. It can be read as a Z-score.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

## 5 Professionals' Concerns and Policy Recommendations

The survey produced comments from seven respondents in the Calgary-Edmonton Corridor. The issues described include a notable increase in the administrative burden; opposition to certain new projects by council, community, and city staff; and the imbalance between municipalities. These comments identify specific concerns surrounding land-use regulation in Alberta's major cities.

The most frequent theme to arise in survey respondents' comments is the increasing administrative burden they face. They mention the need for more reviews than previously required, and having to provide more application elements up front, leading to longer overall approval timelines. For example, design requirements have become more stringent, requiring the involvement of architects in certain circumstances. Similarly, a respondent points to the requirement of providing New Home Warranty<sup>21</sup> applications up front for every unit in a development. In the past, more time was allotted to completing these applications, reducing the costs associated with doing so.

Another recurring theme in the respondent's comments is the opposition to their projects presented by some city councillors and planning staff, who seem unwilling to engage in dialogue with housing professionals. In some cases, commenters also feel that too much public engagement—often expressed as opposition—is required when developing, leading to increases in both costs and timelines.

Several respondents identify a growing gap between the City of Calgary and some of its surrounding municipalities. More applications, longer timelines, and adversarial city staff are mentioned as barriers to development that do not exist in suburbs such as Airdrie, where applications are usually approved in under a year, and the Municipal District of Foothills No. 31, where a comment mentions a single submission is required.

Additional concerns include inflexible land-use districts preventing more varied uses; the inability to build on cheaper land due to servicing restrictions; ill-informed municipal decisions following political change and new planning staff; and the relatively small window of time afforded to builders by Alberta's short summers.

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21. As of February 1, 2014, the New Home Buyer Protection Act requires builders in Alberta to provide home-warranty coverage for all new homes.

## 6 Conclusion

Our data show strong variability in how homebuilders and developers experience regulation across cities in Alberta's Calgary-Edmonton Corridor. We find that reported approval timelines, and how they are affected by the rezoning process, vary significantly across cities. Compliance costs and fees are similar in most cities, aside from the extremes found in Strathmore's low costs and Rocky View County's high costs. Council and community opposition to residential development is perceived as strongest in cities where dwelling values are highest, raising questions about the causes and consequences of local resistance to new housing.

Further work will continue to analyse the results of the Survey of Residential Land-Use Regulation in major cities across Canada. The information produced will enable the systematic comparison of land-use regulation across municipalities, and can be used to understand regulation's consequences for housing markets and regional economies. It can play a role in identifying situations where regulation constitutes a burden on the housing market, and those where regulations are cost-effective and efficient. Continued measurement will help us understand the role of public policy in Canada's urban landscape.

## Appendix 1. Constructing the Index

The first step in constructing the Index of Residential Land-Use Regulation was the careful selection of its components. If any two components of the index are perfectly correlated, they may measure the same effect: adding them both would essentially be double counting. **Table A.1** presents measures of the correlation between the five main, and single omitted,<sup>17</sup> measures of regulation discussed in **section 3**.

**Table A.1: Correlations between measures of regulation for the Calgary-Edmonton Corridor (CEC)**

	Approval Timelines	Cost and Fees	Council and Community	Timeline Uncertainty	Planning Objectives	Rezoning Index
Approval Timelines	1					
Costs and Fees	0.81	1				
Council and Community	0.66	0.80	1			
Timeline Uncertainty	0.77	0.83	0.92	1		
Planning Objectives	0.66	0.80	1	0.92	1	
Rezoning Index	0.13	0.58	0.46	0.37	0.46	1

Note: This table presents pearson correlation coefficients computed across cities of the CEC.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

The measures of regulation we derived from our survey are, in general, positively related across the cities for which we compute an index of regulation. As noted at the end of section 3.6, responses to a question about planning objectives are highly correlated with the council and community index. We do not use our measure of the effect of planning objectives when constructing an aggregate index.

<sup>17</sup> See the conclusion of section 3.6 and the progression of Appendix 2 for a discussion of the omitted measure of regulation.

The rezoning index appears to be unique, positively correlated with measures of council and community opposition and of regulatory costs. Average approval timelines are positively correlated with all other measures; its correlation with regulatory costs is particularly strong.

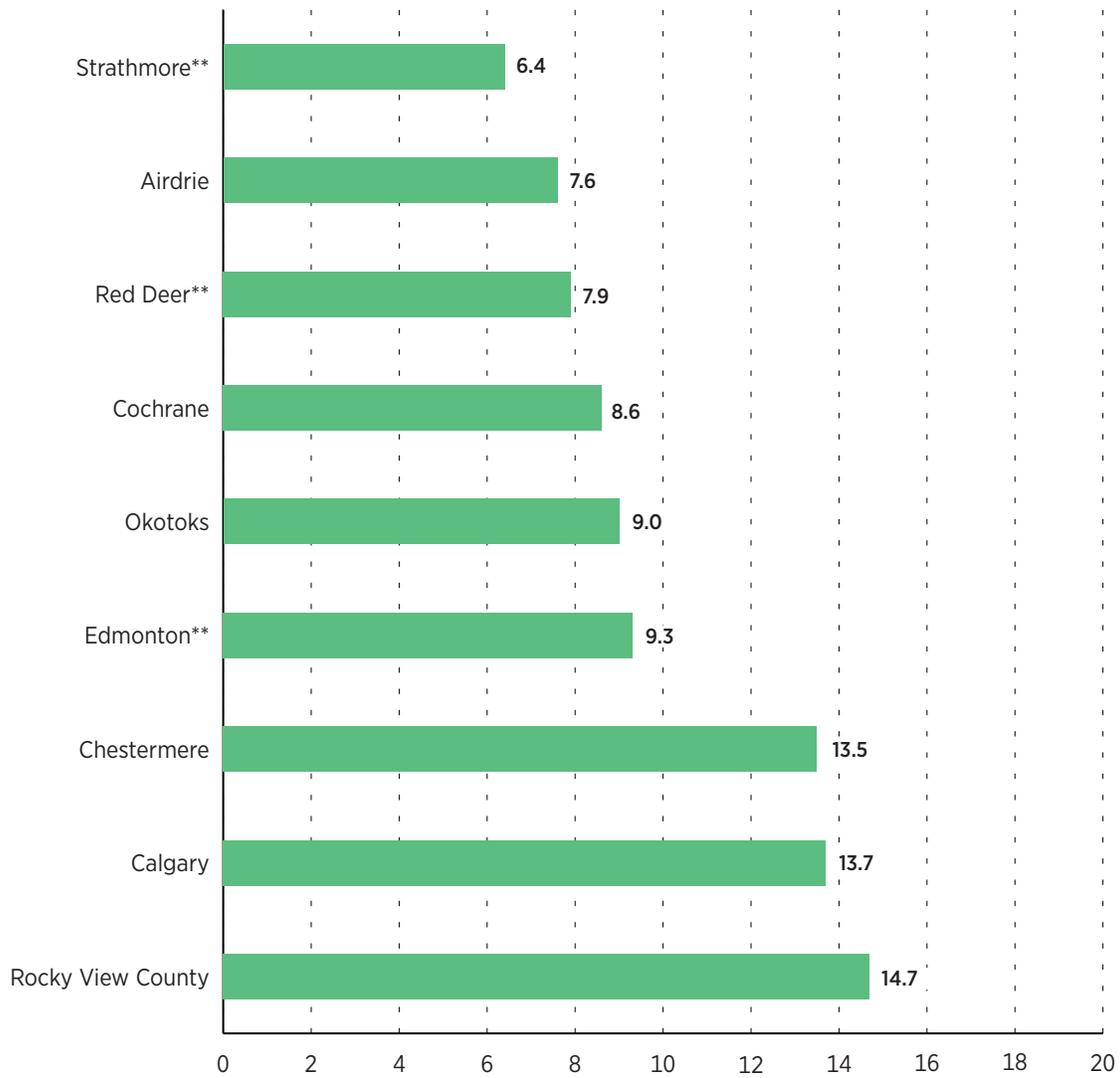
We use the standardized sum<sup>18</sup> of the Average Approval Timelines, Cost and Fees, Rezoning, Council and Community, and Timeline Uncertainty indices as our Index of Residential Land-Use Regulation. For each city, this index captures the frequency, and severity, of deviations from average levels of each of its components in the Calgary-Edmonton Corridor (CEC). This index is centered around zero, positive for cities that score worse than average on many components of regulation, and negative for cities that score better than average.

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**18.** We standardize each component of our index by subtracting its mean (calculated using cities included in the overall index) and dividing by its standard deviation (calculated using the same cities). Each city is assigned an index value by summing across the standardized components.

## Appendix 2. Approval Timelines by Housing Type and Rezoning

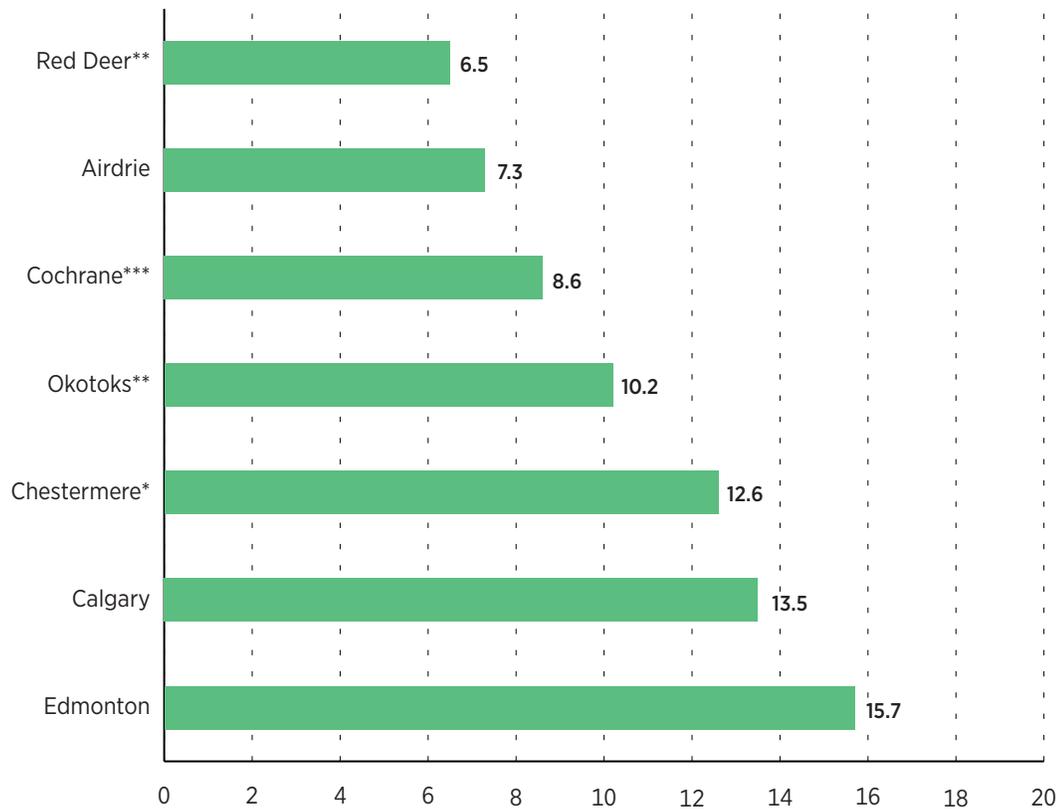
Figure A1: Average approval timelines in the Calgary-Edmonton Corridor for single-family development, in months



Note: \*\*\* = 3 responses; \*\* = 4 responses; \* = 5 responses.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

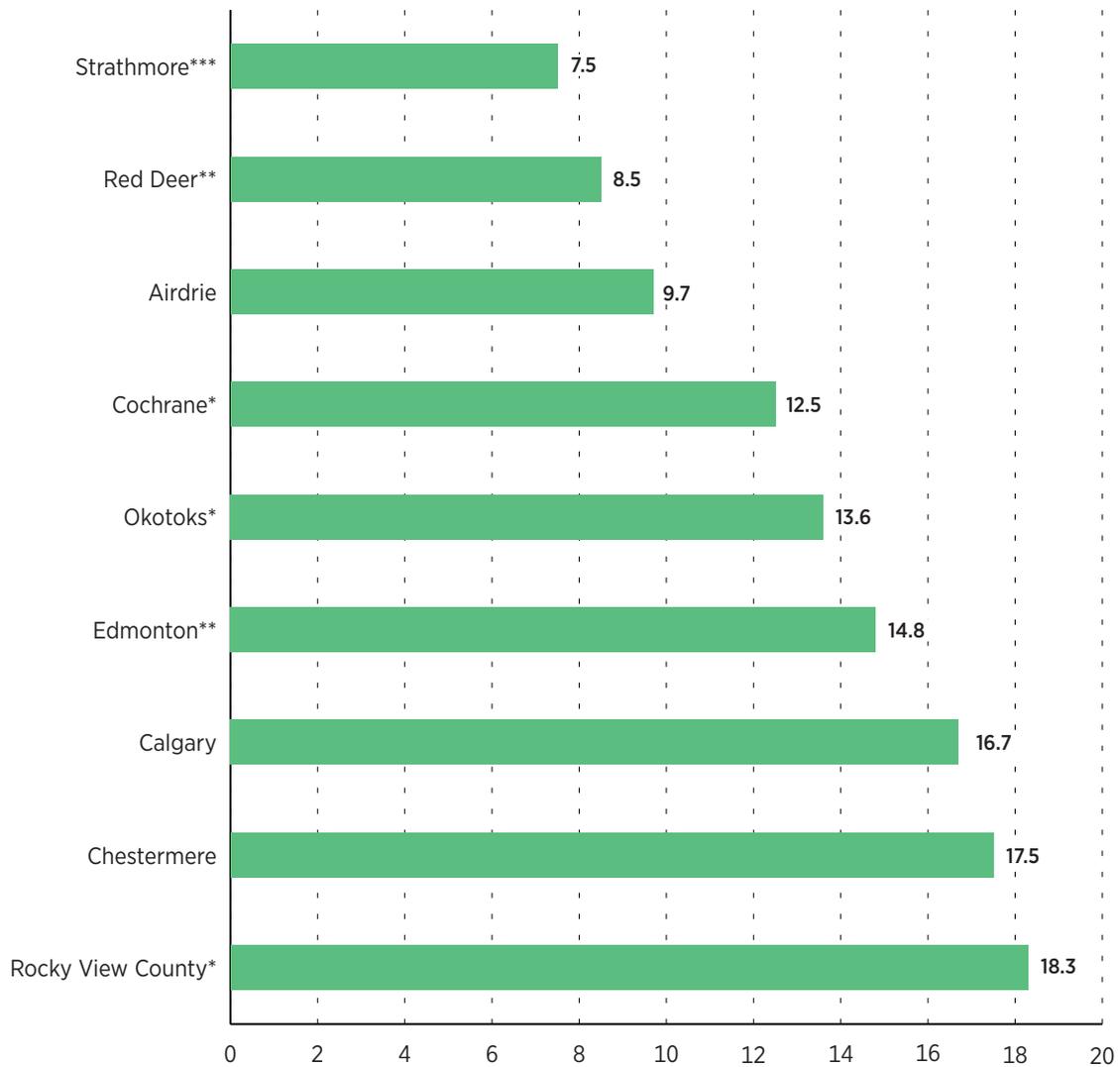
**Figure A2 Average approval timelines in the Calgary-Edmonton Corridor for multiple-dwelling development, in months**



Note: \*\*\* = 3 responses; \*\* = 4 responses; \* = 5 responses.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

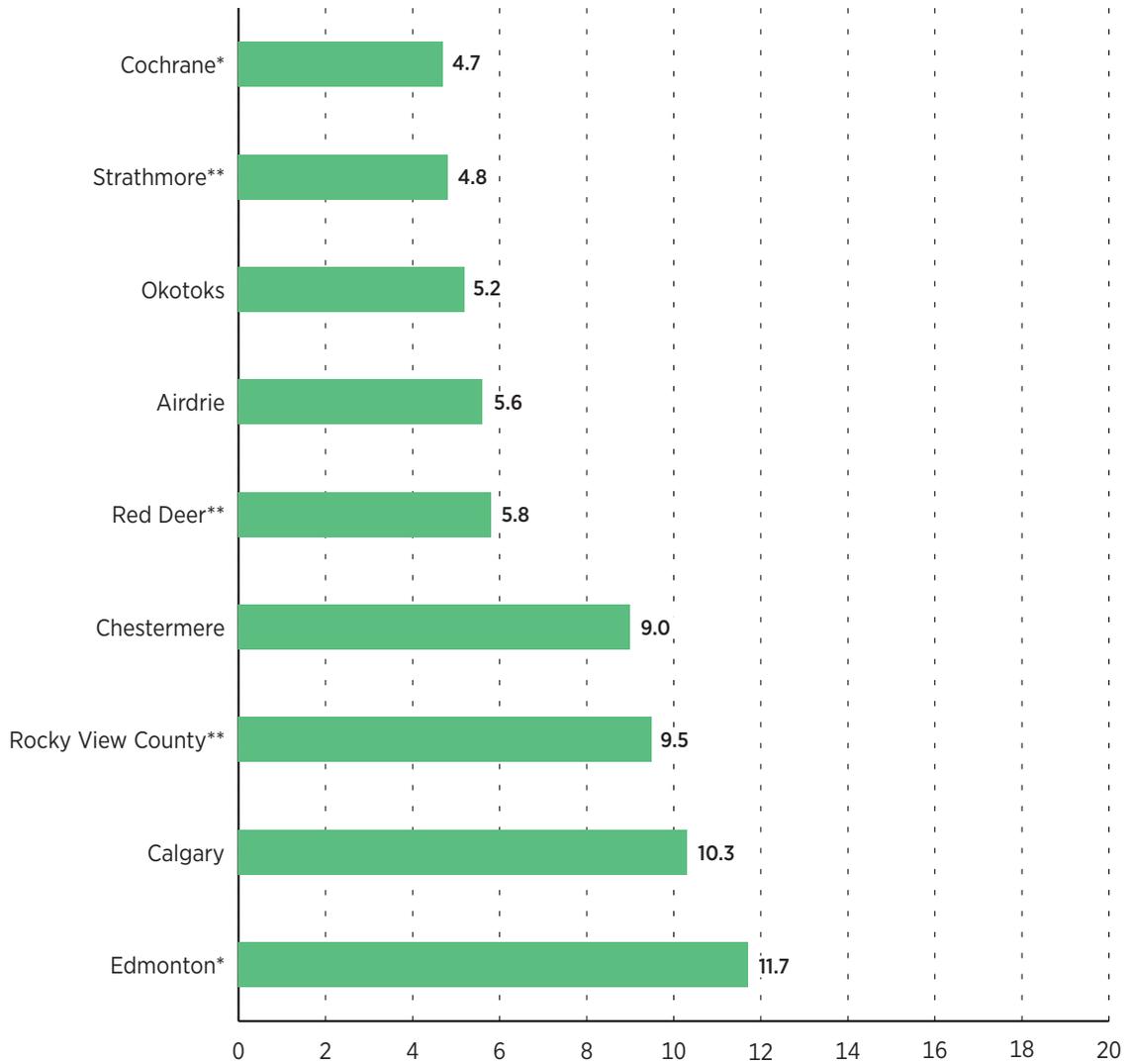
**Figure A3: Average approval timelines in the Calgary-Edmonton Corridor for development requiring rezoning, in months**



Note: \*\*\* = 3 responses; \*\* = 4 responses; \* = 5 responses.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

**Figure A4: Average approval timelines in the Calgary-Edmonton Corridor for development not requiring rezoning, in months**

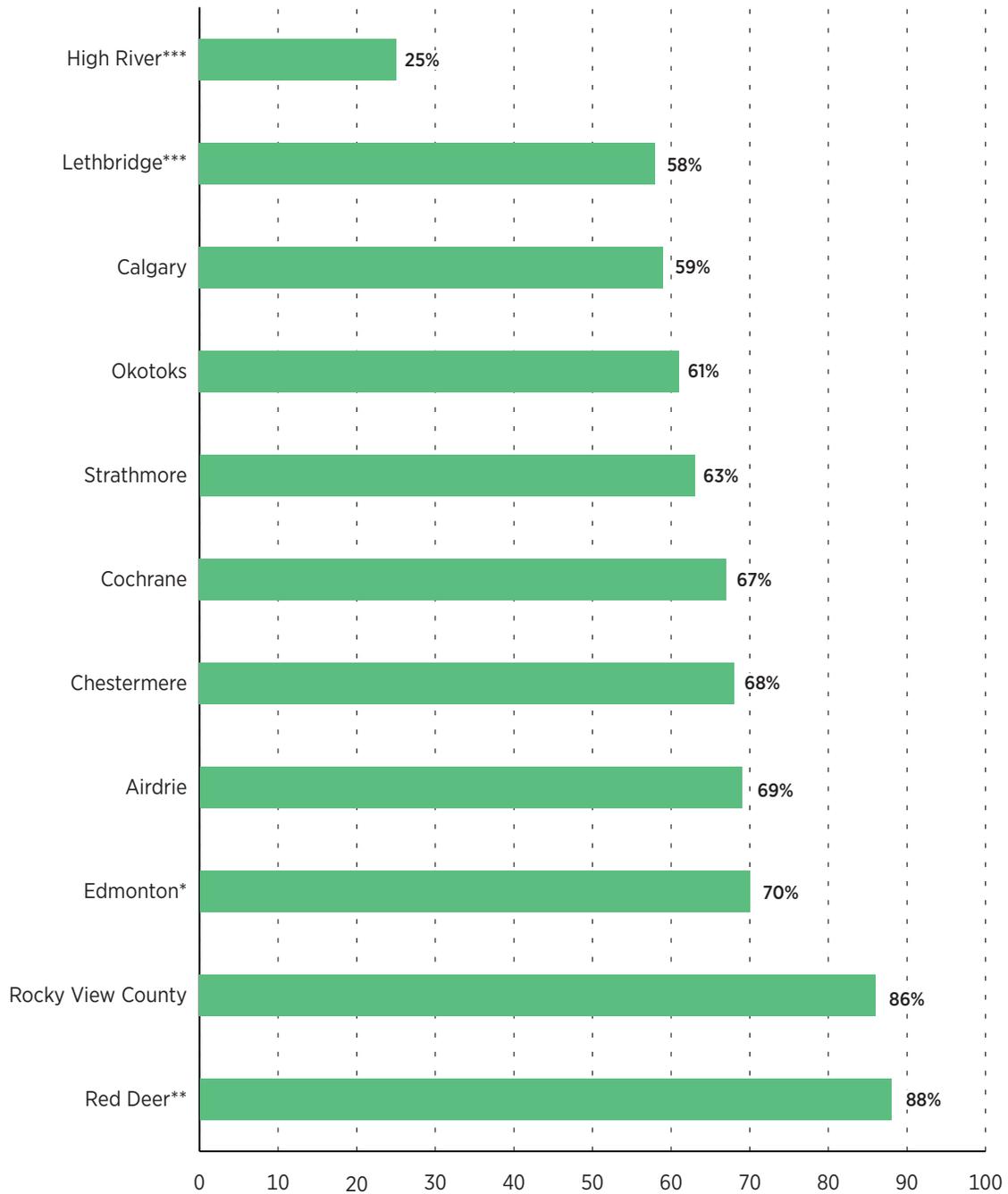


Note: \*\*\* = 3 responses; \*\* = 4 responses; \* = 5 responses.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

## Appendix 3. Rezoning by Housing Type

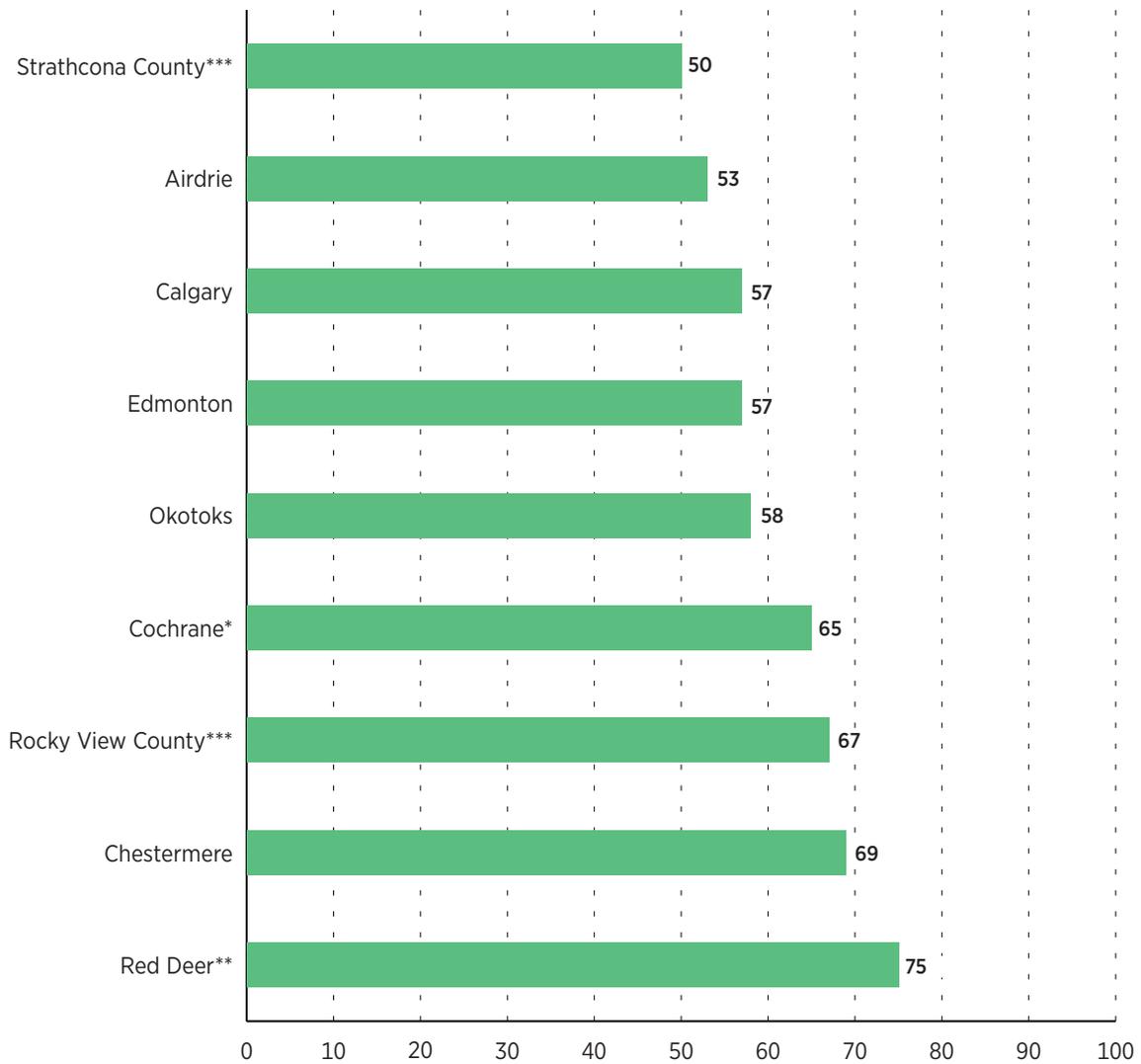
**Figure A5: The Rezoning Index (%) for single-family development in the Calgary-Edmonton Corridor**



Note: \*\*\* = 3 responses; \*\* = 4 responses; \* = 5 responses.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

**Figure A6: The Rezoning Index (%) for multiple-dwelling development in the Calgary-Edmonton Corridor**



Note: \*\*\* = 3 responses; \*\* = 4 responses; \* = 5 responses.

Sources: Fraser Institute Survey of Land-Use Regulation; authors' calculations.

## Appendix 4. Survey Questions

*Note: questions 6, 7, 8, 9, 10, and 11 are replicated for MULTIPLE DWELLING developments.*

- 1 Please go through the following regions and select those with cities that you are FAMILIAR with (in terms of residential development). Please select AS MANY AS POSSIBLE.

*Respondents were presented with 19 regions to choose from.*

- 2 What type of work does your organization do? (Check all that apply)

*The options include land development, new home building, legal services, engineering, architecture and design, and other.*

- 3 What TYPES of development projects has your organization worked on in the past 10 years? (Check all that apply)

*The options include "Single-Family" and "Multiple Dwelling", both of which were described in more detail.*

- 4 Please go through the following cities and select those that you are FAMILIAR with. Please select AS MANY AS POSSIBLE.

*Respondents were presented with all cities available within the region(s) selected.*

- 5 Does your organization rezone property?

*Yes/no answer.*

- 6 Approximately how often do your SINGLE-FAMILY developments REQUIRE REZONING in each city?

*Respondents select from a 5-bin range from "Never" to "Always".*

- 7 Approximately how much TIME do you expect to spend getting PROJECT APPROVAL for standard SINGLE-FAMILY projects that REQUIRE REZONING in each city? From the filing date of the first stage of the approval process to the day you would be allowed to begin construction.

*Respondents select from a 7-bin range from "2 months or less" to "24 months or more", with the option of manually inputting a longer timeline.*

- 8 Approximately how much TIME do you expect to spend getting PROJECT APPROVAL for standard SINGLE-FAMILY projects that DO NOT REQUIRE

REZONING in each city? From the filing date of the first stage of the approval process to the day you would be allowed to begin construction.

*Respondents select from a 7-bin range from "2 months or less" to "24 months or more", with the option of manually inputting a longer timeline.*

- 9** At the outset of your standard SINGLE-FAMILY projects, how does the amount of UNCERTAINTY in the TIME needed for the project APPROVAL PROCESS affect development in each city?

*Respondents select from a 5-bin range from "Encourages development" to "Would not pursue development due to this factor".*

- 10** For your standard SINGLE-FAMILY projects, which of the following BEST APPROXIMATES the COST (per dwelling unit) of the PROJECT APPROVAL and REGULATORY COMPLIANCE process in each city? Please give a rough estimate that includes ALL ADMINISTRATION, PROCESSING, and DIRECT COMPLIANCE COSTS (permitting and review fees, community amenity contributions, development cost levies, inspection costs, relevant legal fees, etc.). There is no need to refer to a *pro forma* or other detailed records; a thoughtful estimate is sufficient.

*Respondents select from a 7-bin range from "Less than \$1,000 per unit" to "More than \$75,000 per unit", with the option of manually inputting a higher per-unit cost.*

- 11** How do local COUNCIL and COMMUNITY groups affect your SINGLE-FAMILY development in each city?

*Respondents select from a 5-bin range from "Encourages development" to "Would not pursue development due to this factor".*

- 12** In general, how do current OFFICIAL PLANNING OBJECTIVES and ZONING BYLAWS affect residential development in each city?

*Respondents select from a 5-bin range from "Encourages development" to "Would not pursue development due to this factor".*

- 13** Are there any other comments or relevant information that you wish to add?

*An open comment box was provided to respondents.*

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