The Revival of Vacant Office Space:

Examining Office to Residential Conversion Projects in Calgary's Downtown

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Executive Summary

Calgary's Downtown is facing an office-vacancy crisis, posing a severe challenge to the city's viability. This issue has prompted the City of Calgary, in partnership with private developers, to undertake office to residential conversion projects to reduce vacant office space. Addressing high office vacancies is a growing concern for cities as the recent pandemic has forced numerous companies to rethink their use of office space, and changing economic circumstances have both led to serious financial and societal implications for several cities (Basiouny, 2022; Graham & Dutton, 2019). This research seeks to understand what lessons can be drawn from these projects to help inform other cities considering a similar approach to eliminating vacant office space while increasing residential development.

To conduct this research I used two methods, a context analysis using GIS software and semi-structured interviews with public sector and development professionals. I found that the City of Calgary used several strategies to advance office to residential conversions including financial incentives, flexible planning policies, the creation of a dedicated support team, and collaboration with industry experts. I also found that from the City's perspective, the primary consideration when reviewing conversion projects is the technical feasibility of the existing building, and the most significant challenge is continued funding support from the Municipal Government. From a development perspective, several opportunities including access to funding, flexible policy, favourable market conditions, and a chance to support environmental and community initiatives created an environment conducive to undertaking office to residential conversion. Additionally, the primary challenges encountered by development professionals were technical rather than policy related.

Based on these results, I identify lessons that can be drawn such as the importance of municipal financing as an effective incentive, flexible planning policy as a mechanism to increase project feasibility, a dedicated support team to ensure approval consistency, the opportunity to simultaneously support broader city goals such as sustainable development and employment opportunities, and the need for suitable market and urban contexts to ensure sufficient residential demand and capacity of neighbourhood services and amenities.

1.0 Introduction

The city of Calgary is currently experiencing an office vacancy crisis in its downtown. In January 2022, one-third of downtown Calgary office space sat vacant (Aldrich, 2022). Influenced primarily by changes in the city's economy due to dropping oil prices and the COVID-19 pandemic's impact on the use of office space, the municipal government was forced to revaluate the downtown urban environment and take steps to address the issue quickly. Among these steps was support for eliminating vacant office space in the downtown by converting it into residential uses. Using various strategies, the municipal government began working with private developers to undertake these projects. Focusing on several office to residential conversion projects completed or currently underway in Calgary, this study draws lessons from these conversions to provide a comprehensive analysis that can help inform strategies and projects in other cities looking to reduce vacant office space and create new housing opportunities. In exploring these projects, I find specific lessons from the regulatory perspective of the municipal government, as well as insights from private developers undertaking office to residential development. As a whole, this study contributes to a greater understanding of office to residential conversion development in the city of Calgary.

1.1 Significance of Research

While much remains to be seen about the future of the physical workplace and demands for office space, it is predicted that by 2030 there will be an increase of nearly 50% of employees working remotely at least part-time (Krasikov & Blake, 2020). Cities with changing economies may also see this occur at a faster rate. This dramatic change will likely lead to decline in the aggregated demand for office space in large metropolitan cities, leading to more vacant office buildings (Krasikov & Blake, 2020). This research highlights potential approaches and strategies to address these office vacancies. Using Calgary's office to residential projects as a case study, the following work reveals a tangible example that details current approaches and their early outcomes. Additionally, this research incorporates perspectives from both the municipal government and private developers, to ensure a comprehensive understanding of

the considerations from both sides when undertaking office conversion projects. This research ultimately provides lessons and considerations for policymakers and private developers to evaluate, modify, and adjust for potential application in other contexts.

1.2 Research Questions

The following research questions provided guidance and direction to this research:

Research Question One: What strategies has the municipal government in Calgary used to advance the repurposing of vacant office space into housing?

Research Question Two: What considerations and challenges has the municipal government faced when advancing the conversion of vacant office space into housing?

Research Question Three: What opportunities and challenges have developers in Calgary encountered when converting vacant office space into housing?

Research Question Four: What lessons does the Calgary example offer other cities aiming to increase their housing stock through office space conversion?

1.3 Structure of the Document:

This report features seven sections, as follows:

Section 1 (Introduction): This section introduces the research project and problem, discusses the significance of the research project, identifies the guiding research questions, and outlines the structure of the report.

Section 2 (Literature Review): This section identifies the existing academic literature on office to residential conversions within an adaptive reuse framework. The literature review describes the

main opportunities, challenges, and existing strategies of office to residential conversions. In addition, it highlights how this study will contribute to ongoing academic and professional discussion.

Section 3 (Research Methods): This section describes the methodology employed in the study, including a description of research participants, an overview of the research activities and limitations.

Section 4 (Context): This section provides background information on the current state of office vacancies in Calgary's downtown, the implications of high office vacancy, and the cause of Calgary's office vacancy crisis. In addition, this section describes the City of Calgary's strategies to advance office to residential conversions and details ongoing and completed office to residential conversion projects in downtown Calgary.

Section 5 (Findings): This section presents the key themes that emerged from the context analysis and semi-structured interviews.

Section 6 (Analysis and Discussion): This section provides a critical analysis of the significant findings and expands on ideas identified in the literature review.

Section 7 (Conclusion): This section concludes the report by answering the research questions, highlighting areas for further research, and offering some final thoughts.

2.0 Literature Review

The conversion of vacant office space to residential housing has become a useful strategy for municipalities aiming to reduce building vacancy (Remøy & van der Voordt, 2014). The process of converting an office building into housing is described in the literature as one form of "adaptive reuse," which is the process of reusing infrastructure for another use (Douglas, 2006;

Remoy & van der Voordt, 2014). This literature review will discuss existing academic work as it relates to adaptive reuse as well as various factors that influence the feasibility and outcomes for this type of development. It will first define adaptive reuse, highlighting key distinctions and drivers. It will then examine discussions and debates around the potential economic and locational advantages of adaptive reuse projects. Following this, it will examine challenges that arise from governmental regulations and the impact they may have on the economic and construction feasibility for conversion projects. Lastly, the review will highlight varying governance-styles, financial incentives, and regulatory tools that can be used as potential strategies for local governments aiming to support adaptive reuse projects. Gaps in the literature are also identified to demonstrate ways in which this research can further support the existing body of literature.

2.1 Defining Adaptive Reuse

Adaptive reuse is broadly defined as changing the use of a building while also attempting to retain as much of the original structure as possible (Ball, 2002; Bullen, 2007; Olivadese et al., 2017). Douglas (2006) defines adaptive reuse as "Any work to a building over and above maintenance to change its capacity, function or performance (i.e. any intervention to adjust, reuse or upgrade a building to suit new conditions or requirements)" (p.1). Often conflated with redevelopment or brownfield redevelopment, the distinguishing feature of adaptive reuse is an emphasis on reusing the existing building for a use other than its original purpose (Vecchio, 2020). A commonly cited objective of adaptive reuse is to provide an alternative to demolition by extending the life of a building that has become obsolete (Ball, 2002; Douglas, 2006; Bullen & Love 2011; Olivadese et al., 2017, Armstrong, 2020). Adaptive reuse is not a novel process and has been utilized as a popular revitalization strategy in many municipalities for a variety of building types including heritage, industrial, religious, and office (Bullen, 2007; Remøy & van der Voordt, 2014; Wilkinson & Remoy, 2017, Langston et al., 2008). Despite such versatility, Bullen & Love (2011) and Douglas (2006) highlight that adaptive reuse is a complex form of development which requires strong analysis and consideration before undertaking. Sanchez et al. (2019) notes that the extra complexity of adaptive reuse projects

lies in the initial existing conditions that often led to unexpected system challenges, design constraints and restrictions. They argue that “If the initial evaluation of the existing conditions is incorrect or underestimated, the impacts for the project's outcome could be disastrous” (pg.2)

2.2 Economic Opportunities

2.2.1 Cost Savings from the Reuse of Building Structure and Materials

There is a growing perception that it is financially advantageous to convert old buildings to new uses rather than to demolish and rebuild (Bullen, 2007; Conejos et al., 2016). Lower development costs have been identified as a key driver for developers aiming to convert old buildings for new uses (Aigwi et al., 2021; Bullen & Love, 2011, Douglas, 2006). A frequently cited cost advantage of conversion projects is the financial savings generated from the reuse of existing building structure and materials (Sanchez et al., 2019; Douglas 2006; Remøy & van der Voordt, 2014). Several authors have highlighted that reusing existing building materials decreases purchasing costs, material transportation costs, and produces less waste compared to demolition and new construction (Remøy & van der Voordt, 2014; Wilson 2010; Bullen 2007). The reuse of main components such as walls, roofing, flooring, and building systems such as hot water heating and plumbing, has been shown to result in approximate savings between 10% and 12% when compared to new developments (Shipley et al., 2006; De Silva & Perera, 2016). Despite potential savings, Bullen (2007) suggests that the life cycle expectancy of existing materials is likely to be shorter than new materials, which can directly increase ongoing maintenance costs for developers. Shipley et al. (2006) also argue that developers reusing a buildings layout and materials almost always report unexpected costs such as building inefficiencies or contamination, which can drive up the cost considerably. Adding to this argument, Bruce et al. (2015) identify asbestos as a common financial and physical barrier when reusing existing buildings. Commonly found in multistorey buildings built during the 1960s and 1970s, asbestos removal follows strict rules when converting a building to residential uses and the developer incurs high expenses if it is present (Remøy & van der Voordt, 2014). Ultimately,

this suggests that potential savings are possible, but are dependent on the condition of the building structure and materials prior to being converted.

2.2.2 Cost Savings from Shorter Construction Period

It has also been argued that adaptive reuse provides cost savings due to a shortened construction period as many of the building elements already exist (Langston et al., 2008; Remøy & van der Voordt, 2007). Johnson (1996) suggests that conversion construction typically takes half to three-quarters of the time necessary to demolish and reconstruct the same floor area. As a result, the quicker construction period reduces the amount of financing required to undertake a project (Langston et al., 2008). Langston et al. (2008) also suggests that a shorter construction period minimizes the risk of inflation on construction costs for developers when development spans a long time. While the reuse of materials may shorten the construction period and subsequently the costs, Coelho and De Brito (2011) argues that labour costs for the reuse materials compared to full demolition is approximately six times higher due to extra time needed to complete the specialized work. Schalmo (2008) also argues that the adaptive reuse "predevelopment" stage can be extremely lengthy and provides no time advantage for developers. As with new construction, developers must deal with changes to zoning regulations, planning commissions, special use permits, and opposition from neighbourhood residents which can lead to an increase in construction time and reduces the shortened time incentive to undertake adaptive reuse projects. This suggests that cost savings gained through shortened construction periods may be lost due to specialized construction tasks and other stages of development often required in adaptive reuse projects.

2.2.3 Economic Opportunity for Development in a Central Location

The opportunity to develop a property located in a central location is a frequently identified financial incentive for developers to undertake adaptive reuse projects (Remoy & van der Voordt, 2007; Olivadese et al., 2017; Wilkinson & Remoy, 2011). Remoy & van der Voordt (2007) suggest that finding a central location for housing development can be difficult, while finding a centrally located vacant office building to convert is often easier. Olivadese et al.,

(2017) identifies the future value of the location and the potential economic gain from renting or selling after conversion has occurred as a key driver for conversion. In particular, buildings in city centres and surrounding areas are easy to transform into other uses such as residential due to specific location characteristics (Olivadese et al., 2017). This includes close proximity to public transportation, main services, and employment which all enable developers to price development high (Olivadese et al., 2017; Geraedts et al, 2017).

Adaptive reuse projects in central locations have also been cited as an opportunity to upgrade inner city areas by attracting people back to city centres and subsequently generating more private investment (Bullen & Love, 2011; Heath, 2001; Remoy & van der Voordt, 2007). While investment in central areas can increase property values and bring investment into deteriorating areas, several authors have highlighted that adaptive reuse residential development is frequently skewed towards the creation of high-end market rental properties (Bullen & Love, 2009; Mohamed et al., 2014; Young 2009). Schalmo (2008) argues that this is extremely problematic for low-income residents as the central location of many adaptive reuse developments can enable easy access to public transit, schools, daycares, retail, employment, and other important amenities. Yet, often low-income residents cannot access housing in these areas due to high costs. A methodical literature review conducted by Mohamed et al., (2014) on adaptive reuse projects found no evidence of adaptively reused buildings where the emphasis was on affordable housing. This suggests that a lack of adaptive reuse to supply affordable housing is a missed opportunity for cities to support low-income individuals in need of housing (Mohamed et al., 2014).

2.3 Environmental Opportunities

The environmental benefits of adaptive reuse projects are a frequently cited opportunity for developers and cities to support global sustainability (Langston et al., 2008, Wilkinson & Remoy, 2017, Bullen, 2007, Bullen & Love, 2010 Conejos et al., 2015, Tam & Hao, 2019). At the global level, building material coming predominantly from demolition consumes 40% of waste in landfills (Langstone et al., 2008, Conejos et al., 2015, Mohamed & Alauddin, 2016). Langstone et al., (2008) suggests that the opportunity for adaptive reuse projects to

provide environmental benefits arise through the recycling of materials and reuse of structural elements which leads to a reduction of waste in landfills. Wilkinson & Remoy (2017), Bullen & Love (2010), and Mohamed et al., (2017) further support this argument by suggesting that a city's existing building stock holds considerable amount of embodied energy generated during the building's construction. By promoting the reuse of components of the existing structure, adaptive reuse ensures that a significant amount of the embodied energy is retained and repurposed. Bullen & Love (2010) also suggest that the environmental benefit of adaptive reuse projects is demonstrated through its ability to generate less pollution and overall energy consumption during the construction period. This is because the reuse of building materials reduces the frequency of companies transporting of old materials to landfill sites, and additionally the emissions generated during manufacturing and delivery any of new materials (Carey & Wilkinson, 2018).

Despite the potential environmental benefits of adaptive reuse projects, several authors have highlighted financial conservation rather than sustainability as being the driving consideration in adaptive reuse projects (Bullen, 2007, Mohamed et al., 2017, Bullen & Love, 2011, Wilkinson & Remoy 2017). A study conducted by Bullen & Love (2011) found that developers considerations around sustainability and environmental performance were seldomly contemplated during the construction decision-making process. Instead, the decision to undertake adaptive reuse projects was driven by economic considerations such as development costs, project costs, investment returns and market (Bullen & Love, 2011). A study by Wilkinson & Remoy (2017) furthered support this argument by finding that sustainability is almost always a secondary consideration behind potential financial profits and complexity of site. According to Mohamed et al., (2017), developers often only consider sustainability opportunities that support their return on investment (ROI), including whether the reuse of material and structural components lower constructions costs, reduce landfill fees, or permitting costs. Therefore, doubts remain about adaptive reuse being a key strategy to promote for municipality to promote sustainability initiatives.

2.4 Regulatory Challenges

A common theme identified in the existing literature is the regulatory challenges that adaptive reuse projects face (Bullen & Love, 2011; Remøy & van der Voordt, 2014). The primary regulatory challenges identified are compliance with building codes (Conejos et al., 2016), and zoning regulations (Remoy & van der Voordt, 2014).

2.4.1 Challenge of Building Codes

Compliance with local building codes is often described as one of the most challenging barriers facing adaptive reuse projects (Stas, 2007; Conejos et al., 2016; Bullen & Love, 2011; Remøy & van der Voordt, 2014). The reuse of older buildings presents a challenge as many older buildings are not in compliance with current building codes for the desired new use (Stas, 2007). The conversion of a vacant building to residential uses is particularly challenging as it requires the developer to reconfigure the building's structure to meet current building codes and residential standards (Sweeney, 2021). Remøy & van der Voordt, (2014) argues that to accommodate overnight-stay compared to day-use functions, adaptations of the building's structure, stairways and facade are often needed. This creates a significant barrier to the appeal of adaptive reuse projects as they may require extensive modifications to bring buildings into compliance with codes, which can be extremely timely and expensive (Bullen & Love, 2011; Shipley et al., 2006; Remoy & van der Voordt 2007). Bullen & Love, (2011) agree with this argument by indicating that building code requirements for fire safety and disability access regulations act as a significant cost barrier and disincentive for developers to undertake adaptive reuse. Remoy & van der Voordt (2007) suggests that obtaining government permission to work outside of building code regulations can be an extremely lengthy process, which reduces potential time gained through conversion.

Contrary to these claims, Armstrong (2020) argues that past literature tends to descriptively report developers' views of building codes as a barrier without evaluation to support these claims. Using a study on adaptive reuse of office buildings in Adelaide Australia, Armstrong demonstrated that there is a lack of evidence to support developers' claims that technical requirements of building code presented critical hurdles to adaptive reuse of office

buildings. Instead, Armstrong argues that while the term 'barrier' is often used to describe building code compliance on adaptive reuse projects, it is more likely that building regulation reduces the financial profitability for developers rather than a being key barrier.

2.4.2 Challenge of Zoning Regulations

In addition to building codes, government zoning regulations also present a key challenge to adaptive reuse projects (Bullen and Love 2011; Remoy & van der Voordt, 2007; Remoy & van der Voordt, 2014). The reuse of a building for an alternative purpose often requires zoning changes as the desired use is not permitted under the current zoning bylaw (Bullen and Love 2011). Analyzing 15 case studies of office to residential conversion in the Netherlands, Remoy and van der Voordt (2014) found that trying to develop housing in an area zoned for offices often requires the developers to undertake several municipal administrative processes, which significantly extend project timelines. Manville (2013) adds to this argument by highlighting that municipal zoning bylaws typically have high residential parking requirements which are very difficult to comply with without obtaining variances when changing the use of the building. Stas (2007) also suggests that zoning changes for adaptive reuse projects often require, "Major studies, analyses, and consultations with various committees to amend or allow even minor adjustment to the zoning regulations that govern a certain property" (p. 33). According to Remoy & van der Voordt (2007), municipal administrative processes for rezoning can last up to 18 months for adaptive reuse projects. As a result, the extra costs and time to facilitate a rezoning of a building can have a substantial negative impact on the profitability and incentive for developers to undertake a project (Stas, 2007).

2.5 Adaptive Reuse Governance Strategies

In attempt to promote and advance adaptive reuse projects various government strategies have been used by local governments (Heath, 2001). These strategies include varying governance approaches (Canelas et al., 2021), financial incentives (Stas, 2007) and flexible building and zoning regulations (Remoy & van der Voordt, 2007).

2.5.1 The Impact of a Deregulated Governance Approach

Governance-style and regulation of building conversions by local governments has varied (Canelas et al., 2022; Remoy & Street, 2018; Ferm et al., 2018). Both Canelas et al., (2022) and Ferm et al., (2018) highlight that government policies have often ranged in terms of governing capacity and functions granted for planning authorities regulating office to residential conversions. A reduction in the regulatory control of planning authorities has been identified as a potential market-oriented strategy that can increase building conversions by incentivizing potential developers (Canelas et al., 2022; Remoy & Street, 2018). Despite such claims, past literature has highlighted how deregulated governance approaches for office to residential conversions can have serious planning and market implications (Canelas et al., 2022; Ferm et al., 2020; Clifford et al., 2018, Clifford et al., 2019; Muldoon Smith & Greenhalgh, 2016).

Several articles have examined England's "Permitted Development Rights (PDR)" to demonstrate the negative impact of deregulating office to residential conversion (Canelas et al., 2022; Ferm et al., 2020; Clifford et al., 2018, Clifford et al., 2019; Muldoon Smith & Greenhalgh, 2016; Remoy & Street, 2018). Introduced in 2013, England's PDR deregulated the conversion planning process by allowing office and residential conversions to be carried out without a formal planning application or approval as a strategy to increase national housing supply (Clifford et al., 2019; Canelas et al., 2022). Using a mixed methods approach to examine various office to residential examples in England, Clifford et al. (2019) identified that deregulation has led to extreme variation in quality and an overall tendency to deliver much lower-quality housing than that done with planning permission. Several authors have supported these claims by identifying housing quality issues such as lack of natural ventilation, poor quality or unsafe internal finishing, lack of natural light, and small dwellings to maximize units per building (Clifford et al., 2018; Ferm et al., 2020; Canelas et al., 2022). The lack of land-use regulations has also led to many residential properties being built in inadequate residential locations such as industrial parks with limited access to public transport, jobs, or other social or green infrastructure (Ferm et al., 2020; Canelas et al., 2022; Muldoon Smith & Greenhalgh, 2016).

Furthermore, by not requiring prior planning approval, conversions hinder planning departments from negotiating development conditions used to generate affordable housing and other social or community infrastructure as a stipulation of approving the development (Clifford et al., 2019). Existing literature suggests that weak governance and deregulation ignores the vital role that planning plays in ensuring conversions consider various economic, safety, and social components.

2.5.2 Soft Governance Approach

As an alternative to deregulation, several authors have advocated for a "soft" governance approach for adaptive reuse projects such as office to residential (Canelas et al., 2022, Remoy & Street, 2018, Clifford et al., 2019). According to Canelas et al., (2022), a soft governance approach is when "Planners play a definitive role in steering the market toward planning aims while also coalescing state-market interests" (p. 727). A soft governance approach is not centred on changing planning regulations, but rather on governments proactively identifying and encouraging developers to implement forms of development desired by municipalities (Clifford et al., 2019). Using conversions policies in the Netherlands as an example of soft governance, Clifford et al., (2019) and Remoy and Street (2018) identified practices such government actors generating discussions with building owners for potential conversions, the creation of information sharing networks between the public and the private sectors, and altering new building quality regulations to ease conversions, while ensuring building regulations continues to enforce crucial residential standards. When comparing this approach to England's PDR approach, studies have revealed that the Netherlands has delivered higher quality and similar levels of office-to-residential conversion (when adjusting for population) (Clifford et al., 2019; Canelas et al., 2022).

2.5.3 Government Financial Incentives

Financial incentives have been a common strategy used by governments to stimulate adaptive reuse projects (Stas, 2007; Bullen and Love 2011; Shipley et al., 2006; Conejos et al., 2016). Aigwi et al., (2021) suggest that there needs to be a clear economic gain for investors to willingly undertake the financial risks associated with adaptive reuse project which is more

evident when government funding is available. The impact that government financial incentives can have on enticing investors was shown in a study conducted by Stas (2007), which found that government financial grants and incentives had a significant positive effect on the return on investment (ROI) for adaptive reuse projects. This is extremely important as ROI is the first often thing the investor examines when considering an adaptive reuse project (Aigwi et al., 2021; Stas, 2007). Various financial incentives have been used for adaptive reuse projects such as tax credits, waiving development fees, public grants, local property tax abatement through rate reliefs and deferment, revolving funds, and low interest loan pools (Aigwi et al., 2021; Shipley et al., 2006). Government financial support is also extremely beneficial for adaptive reuse projects as banks are often hesitant to provide financing due to the belief that adaptive reuse has higher risks compared to new developments (Shipley et al., 2006; Bruce et al., 2015). Banks also often place conditions on financing and require significant tenant pre-commitment, further increasing the financial risk for the developer and emphasizing the need for government financial support (Shipley et al., 2006; Bruce et al., 2015). While tax incentives may increase ROI and lessen some financial risks, a study conducted by Shipley et al., (2006) revealed that financial incentives for large projects in major city markets are usually insufficient in attracting developers as capital costs are extremely high. Shipley et a., (2006) suggests that cities must look at additional incentives that will assist and attract developers towards adaptive reuse.

2.5.4 Flexible Building and Zoning Codes

As previously mentioned, compliance with zoning and building codes present a clear challenge for adaptive reuse projects (Bullen and Love 2011; Remoy & van der Voordt, 2007). To overcome this challenge, flexible building and zoning codes have been shown to be a key strategy used to facilitate adaptive reuse (Heath, 2001; Bullen 2011; Conejos et al., 2016; Riggs & Chamberlain, 2018). Bullen & Love, (2009) identify various ways in which zoning and building code bylaw can be amended. These include changes to minimum density requirements, building height, floor area and setbacks to reduce development barriers to adaptive reuse projects. In addition, Shipley et al., (2006) suggests that height and density bonus zoning amendments allowing developers to build a taller building on another site in return for reusing

an historic building is another incentivizing option. Heath (2001) also supports flexible building codes by highlighting that the amendment of building codes for residential development played a large role in stimulating office to residential conversions in Toronto during the 1990s. Manville (2013) advocates for flexible zoning codes by identifying how exemptions from parking requirements does contribute to more housing through adaptive reuse. Therefore, cities interested in promoting adaptive reuse projects should review ways in which they can reduce zoning and building barriers for developers (Bullen and Love 2011).

2.6 Gaps in the Literature

An examination of the existing literature has revealed similar studies to the proposed research. These have highlighted various considerations, opportunities, challenges, and strategies faced by local governments and private developers when converting office space for residential use. A clear gap in the literature is the lack of examination and discussion of office to residential conversions in the Canadian context. Heath (2001) is the only academic article identified that focuses on office to residential conversions in the Canadian context. As a result, the following research will attempt to fill this gap by examining Calgary Alberta's office to residential conversions.

Additionally, much of the existing research on office to residential conversions was conducted in Europe and more specifically, the United Kingdom and the Netherlands. Therefore, the development, land use, and building regulatory contexts will be different than the Canadian regulatory context in which this study is examining. The existing literature also lacks discussion around what building, and location characteristics municipal governments consider when approving and promoting office to residential conversions. Instead, the existing research focuses primarily on considerations and opportunities for private developers. This research will attempt to uncover specific challenges and characteristics that municipal governments encounter when advancing office to residential conversion projects.

2.7 Conclusion

This literature review has highlighted various opportunities and challenges local governments and private developers may face when considering and facilitating an office to residential adaptive reuse project. The review first highlighted existing debates around potential economic motivations, demonstrating that while reuse of materials and shortened construction may reduce some costs, there is a risk of unexpected costs arising from using existing structures which can dramatically reduce a project's financial feasibility. This section also identified how adaptive reuse provides development opportunities in central locations, but these developments are often marketed to a high income demographic due to the proximity to essential services. The review also identified key challenges to compliance building and zoning regulations, explaining the negative impact this can have on developers. Lastly, the review explored governance approaches as well as financial and regulatory incentives as potential strategies for local governments to facilitate successful conversion projects. The literature provides a greater understanding of common considerations, challenges, and strategies that arise for governments and developers when undertaking adaptive reuse projects. The themes highlighted in this review will serve as key considerations when analyzing the case of Calgary.

3.0 Research Methods

The office to residential conversion projects in Calgary's downtown were chosen as the study's subject sites for their recency and development within a Canadian regulatory context. The two research methods used to examine these projects were a context analysis of the surrounding urban environment and semi-structured interviews with public sector and development professionals involved in office to residential projects. The following section outlines the strategies and steps to address the research questions. This includes discussion surrounding the research process, further detail on the research methods, and highlighting of the limitations of this research project.

3.1 Case Selection and Participant Recruitment Process

To identify and select potential conversion projects to examine for this research, I examined numerous online media outlets, the City of Calgary website, news articles, and participated in a webinar hosted by the Canadian Urban Institute. Through this process, I was able to identify a total of eight office to residential projects in Calgary's downtown under development or previously developed by seven different development companies. Two projects were complete, and six were currently under construction or in the permitting stage. This search also enabled me to identify key professionals working at the City of Calgary involved with supporting the city's downtown area and specifically office conversion projects. Once the projects and development companies were identified, I scanned the development company's websites looking for professionals who were/are involved in the office conversion projects and their contact information. Also, during this period I scanned the City of Calgary website and related articles for the contact information of employees I identified at the City of Calgary. As shown in Table 1, a total of 13 requests were sent via email to professionals in the private development sector and public sector requesting their participation in this research. This resulted in a total of seven interviews being completed.

Table 1 Interviews Completed and Requests

Sector	Requests	Accepted	Interviews Completed
Development Professional	**9**	**6**	**6**
Public Sector Professional	**4**	**1**	**1**
Total	**13**	**7**	**7**

3.2 Data Collection

3.2.1 Context Analysis

The first method used in this research was a context analysis of the eight projects. The context analysis was used to determine examine how the surrounding urban environment may

have influenced the office to residential conversion projects. To achieve this, I first identified the five census tracts where the projects were located and reviewed relevant census data from Statistics Canada. This helped me identify and examine the existing and previous social and market conditions in the area. To further support the context analysis, I also created digital maps using satellite imagery through ArcGIS Pro. The use of GIS imagery illustrates the spatial relationships between multiple data sources related to a project (Sheinberg & Sheinberg, 2015). Using the "City of Calgary Open Data Portal", I accessed various shapefile data sets that were then integrated into maps. This helped provide a visual context of the surrounding urban environment and land uses in relation to the office to residential conversion projects. The application of a context analysis was particularly useful in addressing research questions two and three, which examined potential considerations, opportunities, and challenges of developers and the municipal government when facilitating office-to-residential conversions.

3.2.2 Semi-Structured Interviews

The second method I used to conduct this research was semi-structured interviews. This method was chosen due to its ability to ensure that specific topics were addressed while providing the flexibility to probe for additional information (Given, 2008). Furthermore, it allows the researcher to clarify topics or emphases that can be lost with less personal and direct research techniques (Harrell & Bradley, 2009). As mentioned, I conducted seven interviews, six with development professionals and one with an employee at the City of Calgary. All participants had previously or were actively working on office to residential conversion projects in downtown Calgary. Interviews occurred from early December 2022 through mid-January 2023 and were all conducted using Zoom. Interviews lasted between 45-60 minutes. Each interview was recorded on Zoom and then transcribed using Zoom's AI transcribing software. During each interview, I took notes on key points made by participants. To maintain confidentiality, each interviewee was assigned a number and categorized by their job sector (Public Sector Professional/Development Professional). Following the completion of the interviews, the results were analyzed using a coding framework I developed for this research project. All the data was coded according to inductive and deductive themes created.

Deductively, I relied on the themes previously identified in my literature review and, inductively I added additional themes and subcategories as they emerged in the data.

3.3 Limitations

The first limitation is related to the timing of this research project and the current state of most of the office to residential conversions in Calgary's Downtown. Although underway, many of the projects are still in the early stages of development. The amount of time allocated for this degree project did not allow for the majority of the projects to be examined through to their completion. As a result, the research heavily relies on data accumulated during the early stages of the office to residential conversion process. The second limitation of this research is limited number of interviews that took place specifically with professionals working in the public sector. There are undoubtedly additional opinions from municipal employees and other professionals that are not documented in this report. The third limitation of this study is that the majority of the findings come from the private sector, which is primarily focused on the profitability of office to residential conversions. The final limitation of this study is that it focuses solely on office to conversion projects in Calgary. Therefore, the strategies, opportunities, challenges, and recommendations may not be as relevant in municipalities with entirely different urban, regulatory, and market contexts.

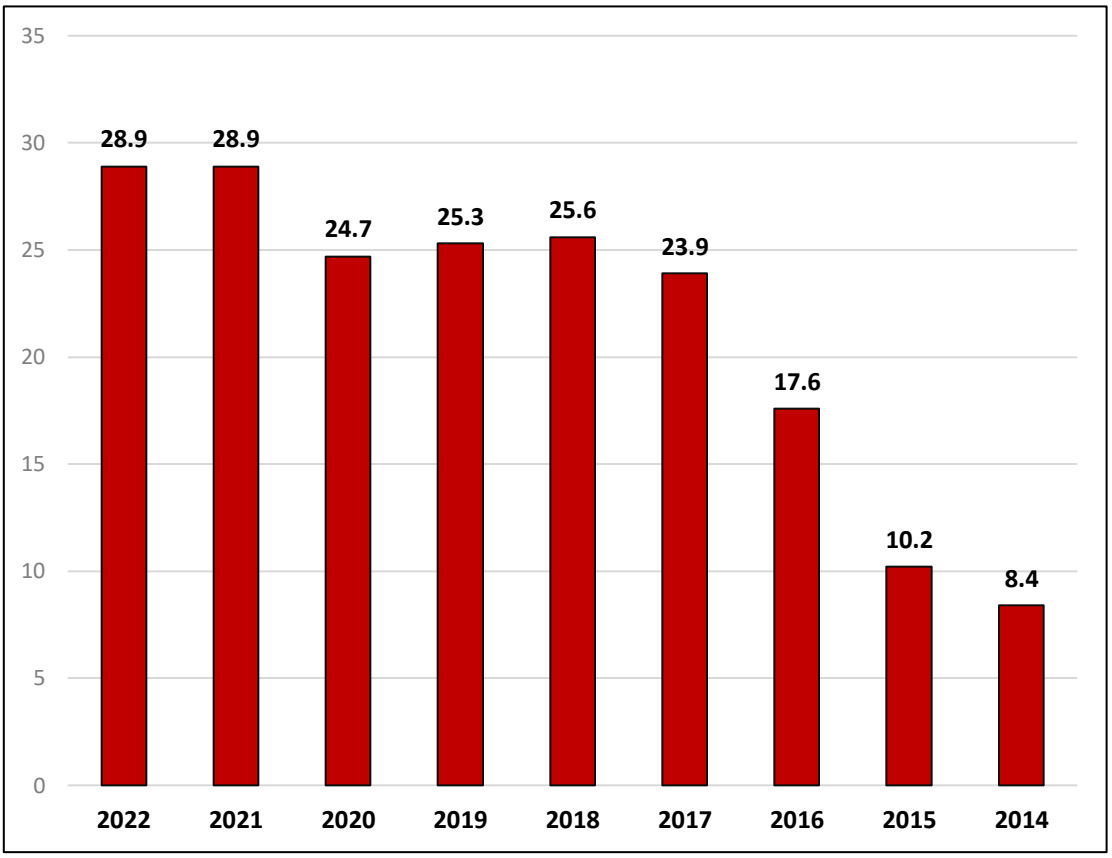
4.0 Background

This section examines the current context and cause of high office vacancies in Calgary's downtown. It will also detail the negative implications of high office vacancy and provide background information on existing office to residential projects and municipal strategies. It is important to mention that this section is being written in November of 2022. The state of Calgary's downtown office space will change as office conversion projects continue and new economic contexts emerge.

4.1 Overview of Office Vacancy in Calgary

The City of Calgary is home to approximately 1.3 million people, making it the largest city in the province of Alberta (City of Calgary, 2021a). Historically, Calgary has been known as a western Canadian hub for business, sports, logistics, and as a gateway to the Rocky Mountains (City of Calgary, 2021a). In recent years, Calgary has been known for its extremely high downtown office space vacancy (Graham & Dutton, 2021). As shown in Figure 1, since 2014, Calgary's downtown office vacancy rate has increased annually.

Figure 1 Downtown Calgary Office Vacancy 2022-2014 (% of total units, Q1)

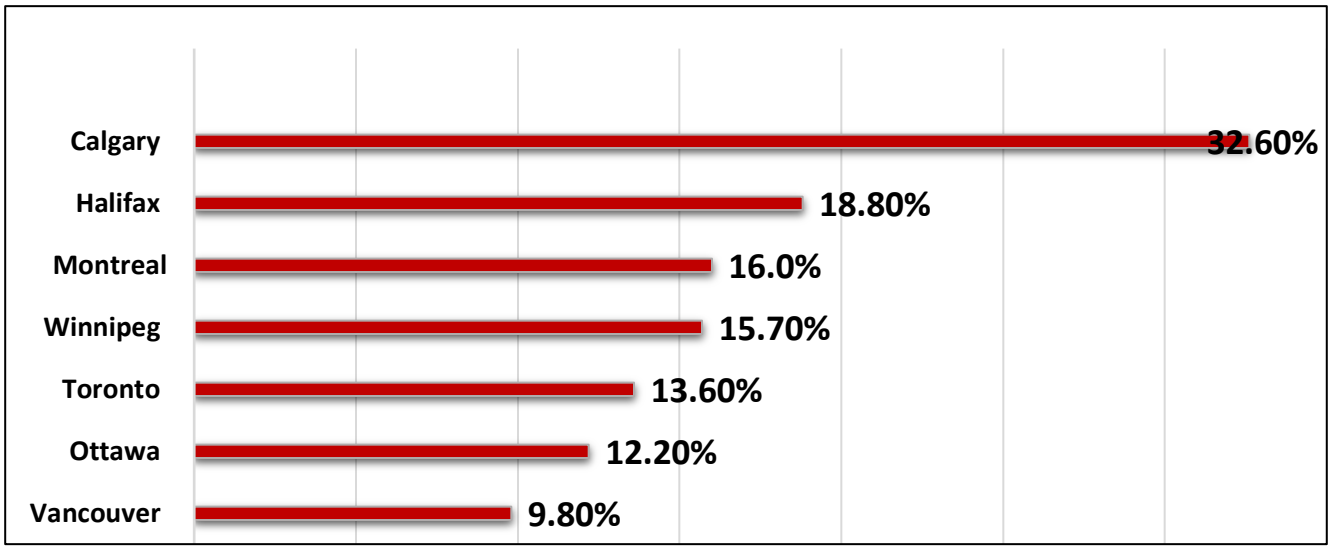


Source: (Avison Young, 2020;2022).

At the time of this report, Calgary's downtown office vacancy is approximately 32.6% with roughly 11.3 million square feet of office space vacant (CBRE, 2023). On average, "Office space vacancy rates between 4% and 8% are generally considered healthy or within a 'balanced'

territory" (Chan, 2023, p. 1). As shown in Figure 2, when compared to major Canadian cities, Calgary's downtown has the highest office vacancy rate. In the current conditions, the City of Calgary estimates that approximately six million square feet of office space need to be removed from the market through leasing, adaptive reuse, and/or demolition to help address downtown office vacancy and stabilize office property values over the next decade (Bell, 2022).

Figure 2 Major Canadian Cities Downtown Office Vacancy 2022 (Q4)



Source: (CBRE, 2023).

4.2 Implications of High Office Vacancies

High office vacancies can have serious societal and economic implications for cities (Remoy & van der Voordt, 2007; Graham & Dutton, 2021). As suggested by Remoy & van der Voordt (2007), a reduction in the occupancy of office buildings can lead to social issues as there is less opportunity for informal surveillance due to fewer people in the area. In addition, this environment can generate favourable city conditions for vandalism, unwanted and illegal occupancy, and general concerns for safety (Remoy & van der Voordt, 2007; Graham & Dutton, 2021). Economically, high office vacancy is detrimental to city businesses that rely on frequent foot traffic stemming from employees working in proximal office buildings (Graham & Dutton, 2021). According to Coldwell Banker Richard Ellis Group (CBRE) (2022), this issue is becoming increasingly evident in Calgary as retail vacancy in Calgary's downtown Central Business District

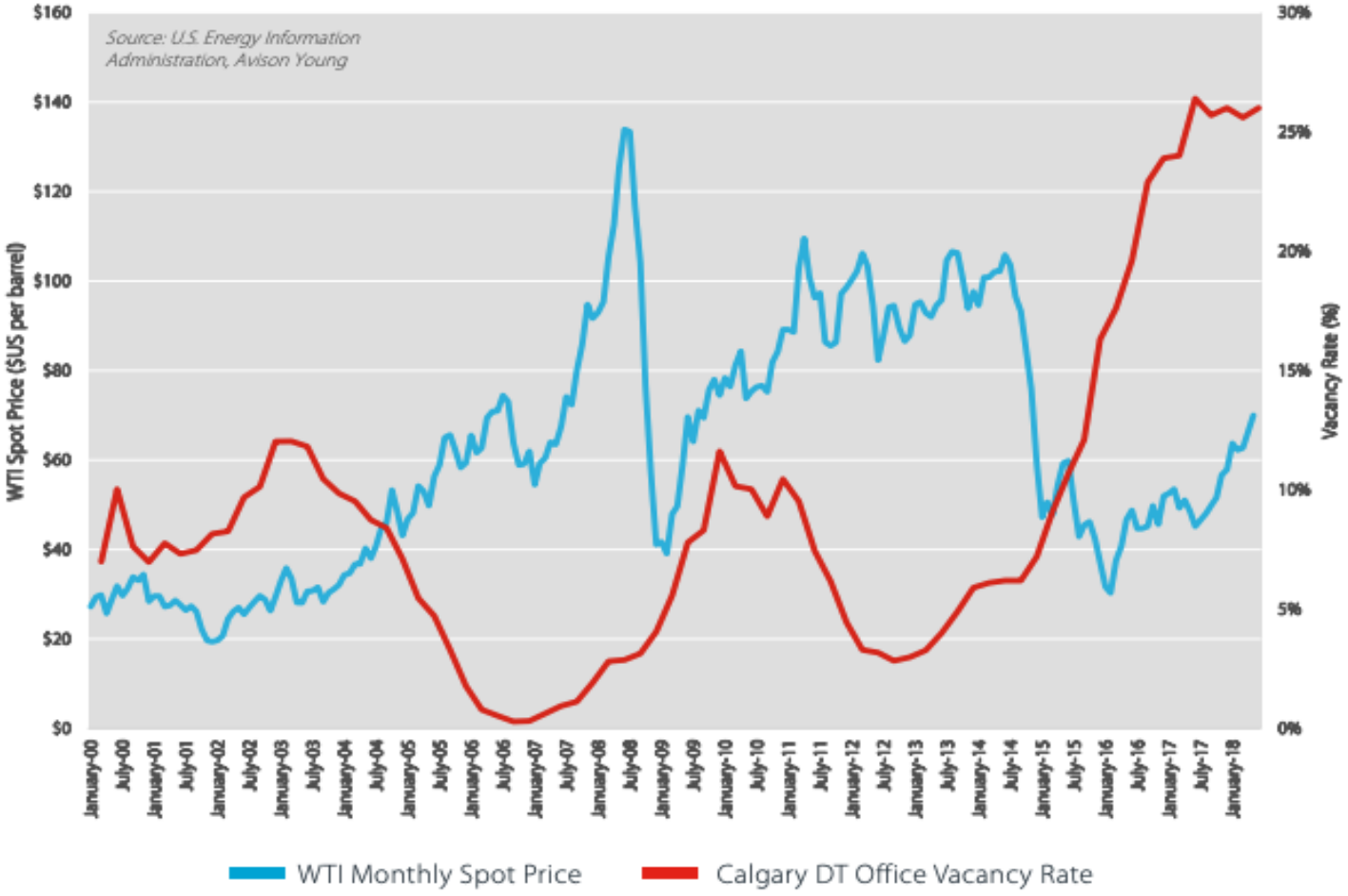
is almost double compared to any other area in the city. CBRE (2022) explains that this trend is directly correlated to a decrease in pedestrian traffic due to record levels of office vacancy. High office vacancy rates also have a significant economic impact on the revenue generated for municipalities. Specifically, prolonged vacancy in an area often leads to a reduction in the property value of the building and surrounding properties (Graham & Dutton, 2021). This reduces the associated property-tax revenues that municipal governments can generate (Heath, 2001). This is particularly concerning for Calgary as non-residential buildings are taxed at a higher rate than residential properties (Graham & Dutton, 2021; Dahlby, 2018). Furthermore, the value of office buildings in the city's downtown core decreased by roughly 16 billion dollars or 68% between 2015 and 2022 (Varcoe, 2023). This has forced the Municipal Government to apply more assessed value to suburban non-residential properties, resulting in significant tax increases across the city (CORE Working Group, 2022). This ultimately reveals the negative implications for cities resulting from high office vacancies.

4.3 What Has Stimulated High Office Vacancy in Calgary

Calgary is known as the administrative centre for Canada's oil and gas industry (Graham & Dutton, 2021). As such, the city's economic activity has often mirrored the petroleum sector's unpredictable changes and trends (Graham & Dutton, 2021). A consequence of this relationship is the impact of oil prices on the occupancy, built infrastructure, and development in the city's downtown. During oil booms, construction activity in Calgary is high as developers respond to the needs of companies and organizations (Graham & Dutton, 2021). In addition, office space construction is often skewed towards creating new buildings rather than replacing existing ones due to market preferences (Weber, 2015). This was demonstrated in the oil boom of 2006-2007, as 57% of new office space built in Canada during this period was in Calgary, despite the city then accounting for approximately one-thirtieth of the country's population (Brent, 2007). Decades of sharp increases in the price of oil and subsequent development have contributed to Calgary having the largest amount of downtown office space per capita among major cities in Canada (Brent, 2007; City of Calgary, n.d).

On the other hand, recessions caused by falling oil prices reduce the demand for existing infrastructure as companies attempt to minimize costs through job cuts and office space requirements (Graham & Dutton, 2021). In recent years, Calgary's economic activity has been plagued by a recession. This was stimulated by a global collapse of oil prices starting in 2014, which saw the price of oil drop over 50% in 6 months (Johnson, 2015). The falling price of oil led to tens of billions of energy investments being cancelled, significant cuts to the industry's workforce, and oil companies offering subleases on their existing buildings to recoup costs (Johnson, 2015). The impact on office vacancies in Calgary's Downtown is illustrated in Figure 3, which shows a direct correlation between changes in the West Texas Intermediate (WTI) price per barrel and the percentage of office vacancies in Calgary's downtown.

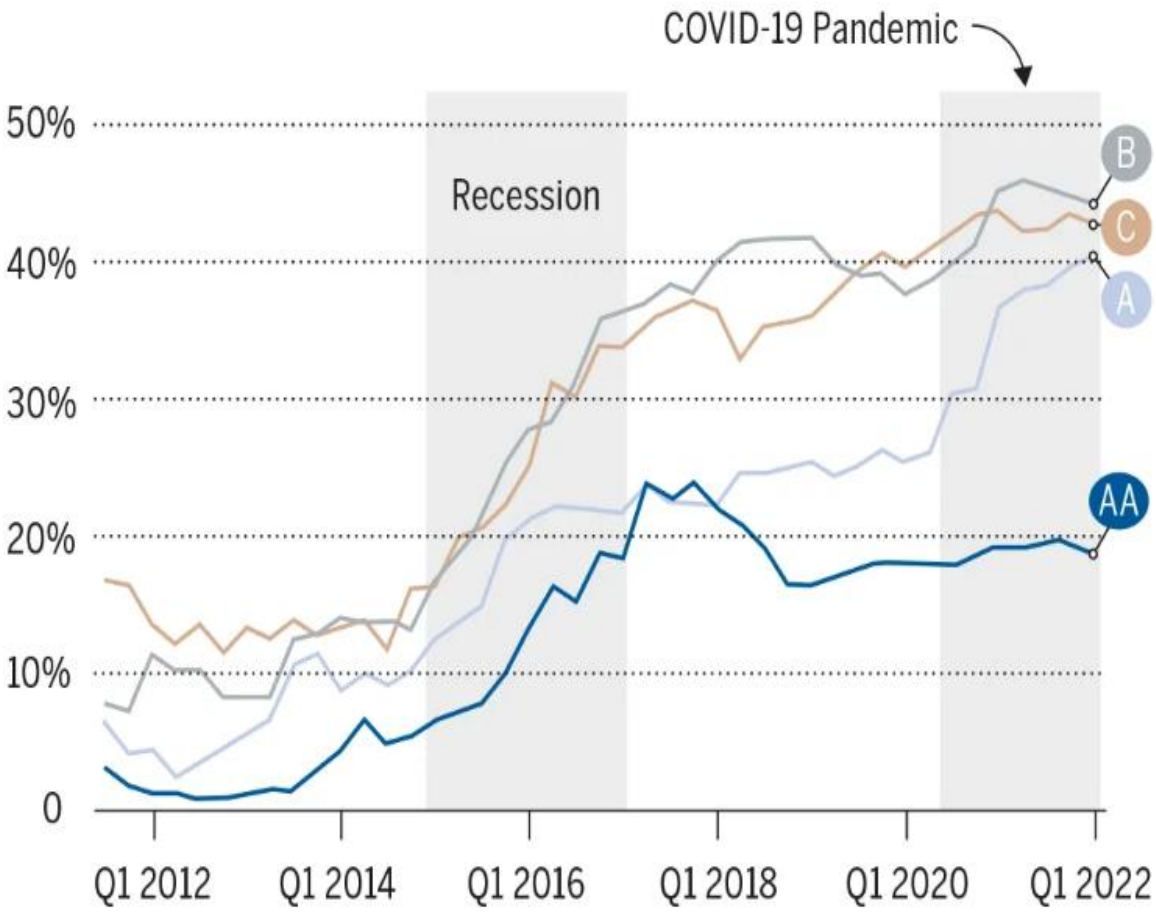
Figure 3 Historic Oil Prices and Calgary Downtown Office Vacancy Rate.



Source: (Avison Young, 2018)

Another contributing factor to high office vacancy in Calgary has been the COVID-19 pandemic, which forced numerous companies to rethink the use of their office space. Figure 4 shows a sharp increase in office vacancy for A, B, and C class buildings during the COVID-19 pandemic. This was due to many companies operating in Calgary's downtown opting to forego existing leases or reduce the amount of office space used in favour of more employees working remotely (Osental, 2021). While it is unknown what the exact demands for office space in the future will be, it is predicted that the trend of companies decreasing the amount of office space leased will continue, further reducing the demand for aggregated office space in the downtown area (Osental, 2021).

Figure 4 Impact of COVID-19 on Downtown Calgary Vacancy



Source: (Aldrich, 2022)

4.4 Existing Strategies

To respond to increasing levels of office vacancy in its downtown, Calgary's municipal government used various strategies to help revitalize the area. Several municipal programs were created to fund projects such as office to residential conversions. Notably, in April 2021, City Council approved "Calgary's Greater Downtown Plan: Roadmap to Reinvention", a revitalization strategy requiring a total investment of approximately $1 billion dollars over a 10-year period (Anderson, 2021). In supporting this plan, Council also approved the "Realizing Calgary's Greater Downtown Plan: Initial Investments and Incentives", which outlined an investment of $200 million to begin implementing the plan (Smith, 2021). Of the $200 million, $123 million came from city reserves, while the remaining $77 million came from the Federal Governments Canada Community Building Fund (MacVicar, 2021). Part of this initial investment helped create the "Downtown Calgary Development Incentive Program", which focuses specifically on addressing the downtown office vacancy issue. The City of Calgary created the program in collaboration with industry experts to incentivize building owners to convert vacant office space for residential use (City of Calgary, 2021a). The program is intended to reduce office vacancies and help the city add to the residential housing stock. This is pertinent as Calgary's rent is among the fastest increasing in Canada due to an extremely high demand for rental properties combined with a low supply of existing options (Stolte, 2022). Additionally, in 2022 Calgary's housing market set a record for the number of residential sales and prices (Schlesinger, 2023). This was stimulated by a booming gas industry, job growth, and record high migration (Klein, 2023). This trend is likely to continue as Calgary's population is expected to increase by an additional 88,000 people by 2026, further intensifying the demand for residential options in the city (MacVicar, 2022).

Phase 1 of the "Downtown Calgary Development Incentive Program" operated from August-September 2021 and was later reopened in July-September 2022 following new funding circumstances. City Council initially committed $45 million to the program, which was later increased to $100 million (City of Calgary, 2022a). The incentive program offers building owners a grant of $75 per square foot for office to residential conversions based on the original gross building area of existing office space that will be converted to residential (City of Calgary,

2021b). Each application required several components, including a full project proposal, description and background of the existing asset and location, as well as design, financing, and leasing information (City of Calgary, 2021b).

Figure 5 Downtown Calgary Development Incentive Program Map

Source: (City of Calgary, 2021b)

The eligibility for grant funding through Phase 1 of the Incentive Program was based on six key criteria (City of Calgary, 2021).

1. Elimination/removal of office space.
2. Conversion from office space to residential space.
3. The Property is located within the Greater Downtown Plan Area (see Figure 5) with priority given to projects in the Downtown Core location.
4. Applicant is the property owner or provides necessary authorization from the owner.

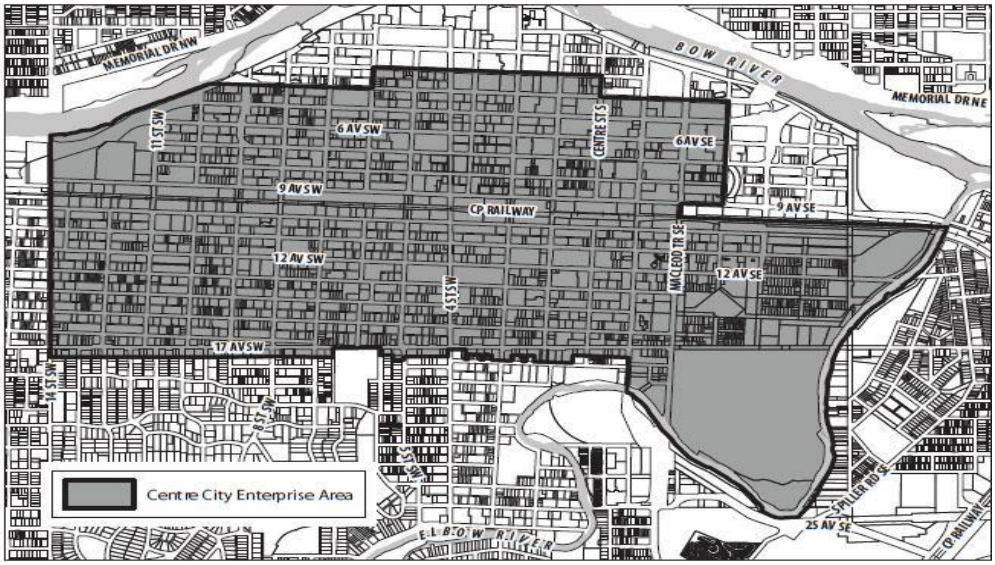
5. Evidence of project financing.
6. Applicants track record.
    - Previous experience with conversions or support from consultants/advisors that have conversion experience.
    - Experience in completing a similar project to the scope and size of the proposed project.
    - Documentation of the City's previous dealings with the applicant, if any.
    - Proof that the applicant has the labour capacity from a project management, supervision, and execution perspective.
    - General and financial details about the applicant.

Projects are also selected based on how they align with the broader goals outlined in Calgary's "Greater Downtown Plan" (City of Calgary, 2021b). Following a full review and recommendations from the Downtown Strategy Team and industry experts, final grant approval comes from the "Incentives Approval Committee" consisting of Calgary's General Manager of Planning & Development and Chief Financial Officer (City of Calgary, 2021b). Grants provided by the Committee are up to a maximum of $10 million per property, with the opportunity to get more than $10 million pending approval from City Council (City of Calgary, 2021b). At the time of this report, the program remains in Phase One. The City intends to expand the incentive program in the following phases, moving beyond residential use to consider other types of office conversion projects such as hotels, institutional uses, and laboratories (City of Calgary, 2021b).

While not explicitly created for office to residential conversion projects, the city has also used the "Centre City Enterprise Area" (CCEA) as a policy strategy to streamline converting vacant office space to residential use. Instituted in 2017, the CCEA enables development to be exempt from a development permit when the proposed change of use is listed in the land use district, such as converting office to residential in the downtown area (Mahler, 2018). As shown in Figure (6), the CCEA program area constitutes a large portion of the city's downtown and overlaps with sections of the incentive plan's geographic area. While there are certain

development conditions where the CCEA does not apply such as proximity to a freight rail corridor, the CCEA is an effective strategy that can aid in the conversion of vacant office space to residential.

Figure 6 Centre City Enterprise Area Map



Source: (City of Calgary, 2019)

4.5 Calgary's Office to Residential Conversion Projects

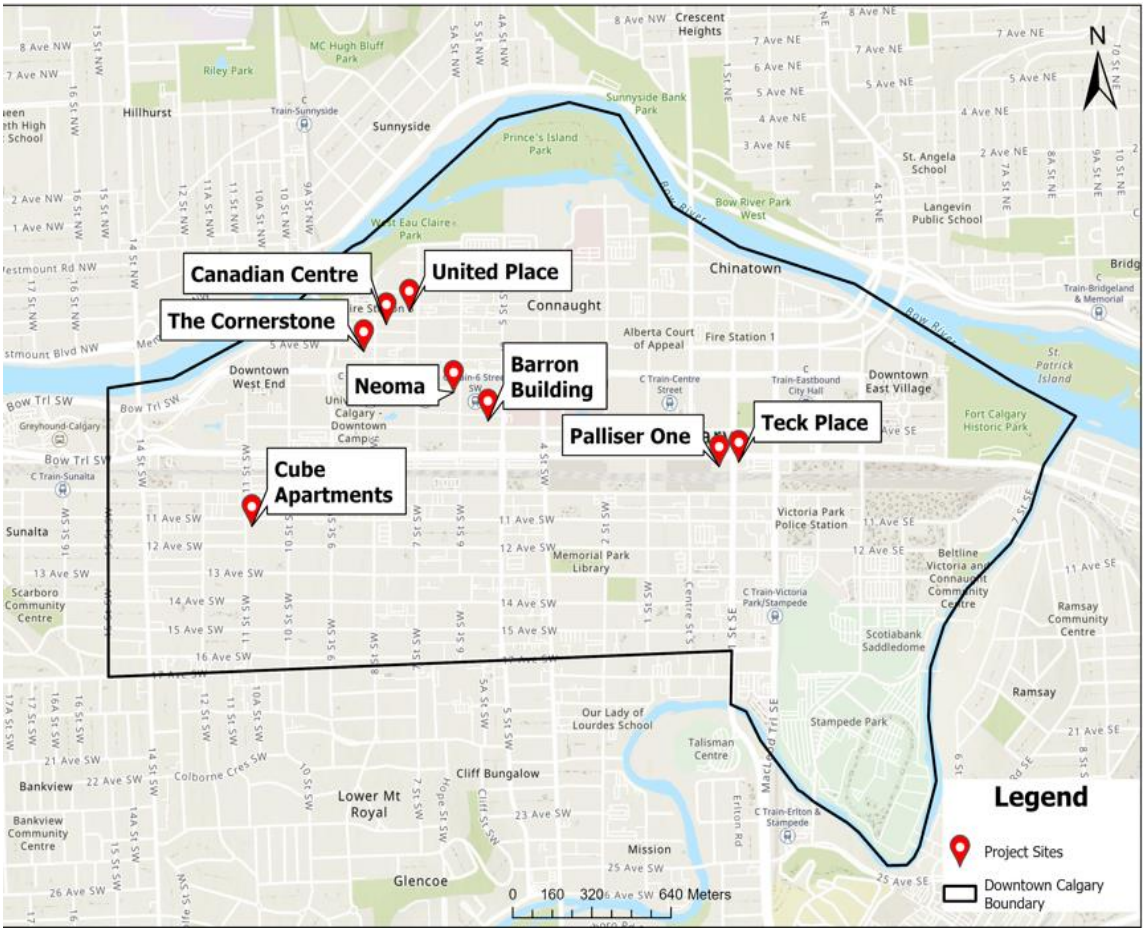
Table 2 Office to Residential Conversion Project Details

Project	Address	Size of Conversion	Total Units	Status
Palliser One	125 9 AVE S.E.	200,000 sq. ft.	176	Permitting/ Preliminary Planning
Teck Place	205 9 AVE S.E.	110,000 sq. ft.	113	Permitting/ Preliminary Planning
Canadian Centre	833 4 AVE S.W.	163,000 sq. ft.	225	Permitting/ Preliminary Planning
United Place	808 4 AVE S.W.	88,000 sq. ft.	81	Permitting/ Preliminary Planning
Barron Building	610 8 AVE S.W.	114,000 sq. ft.	94	Under Construction
The Cornerstone	909 5 AVE S.W.	104,000 sq. ft.	112	Under Construction
Neoma	706 7 AVE S.W.	95, 000 sq. ft.	82	Complete
Cube Apartments	1177 11 AVE S.W.	62,000 sq. ft	65	Complete

4.5.1 Project Details

At the time of this report, eight publicly released office to residential projects have been constructed, proposed, or are under construction in Calgary's Downtown (see Figure 7 & Table 2).

Figure 7 Office to Residential Conversion Project Map



The first completed office to residential conversion was the "Cube Apartments" project which was finished in 2019. The "Cube Apartments" is a 65-unit conversion financed by the development company (Toneguzzi, 2019). The second completed conversion was the Neoma project (formerly Sierra Place), an 82-unit affordable housing conversion completed in 2022 (Randhawa, 2022). This project received funding through various sources, including the federal

government's Rapid Housing Initiative, a bilateral housing agreement between the province and federal government, the City of Calgary, and private donors (CMHC, 2022). As of 2022, the City of Calgary has approved five projects for funding through phase one of the "Downtown Calgary Development Incentive Program". The five approved projects are the Canadian Centre (225 units), Palliser One (176 units), Teck Place (113 units), The Cornerstone (112 units), and United Place (81 Units). Financing for these projects is generated from the development company and the incentive program (City of Calgary, 2022b). In addition to the five approved projects, the City of Calgary approved a separate office to residential conversion funding program for the Barron Building. The Barron Building is a historically significant Art Moderne-style office building that could not qualify for the incentive program as its present status was of 'non-office' use (Mahler & Marchut, 2021). To assist with the conversion of this former office building, the City of Calgary used funding principles derived from the incentive program but with two major distinctions, "1) the building is not required to currently be office space; and 2) the building must receive formal Municipal Historic Resource designation to legally protect the building and prevent further erosion of the building's historic value" (Mahler & Marchut, 2021, p.3).

5.0 Findings

In this section, I begin by highlighting the key findings from my context analysis to assess how the surrounding urban environment may have influenced the opportunity for office to residential conversions in downtown Calgary. Following this, I summarize my interview responses to identify key themes which appeared during the coding process, along with important ideas that relate to the literature or align with this study's research questions. First, I examine my interview with a public sector professional, which focused on three themes: key strategies, considerations, and challenges the City of Calgary faced when advancing office to residential conversions. Following this, I examine my interviews with development professionals which generated findings focused on both the opportunities and challenges faced by developers undertaking office to residential conversion in Calgary.

5.1 Context Analysis

This section will examine the area around the eight identified office to residential conversion projects to determine how the surrounding social and urban environment may have presented opportunities or challenges when undertaking an office to residential conversion project.

5.1.2 Surrounding Land Use:

Many properties in Calgary's downtown currently have a predominant use that is not residential. This is shown in Figure 8 which highlights the predominant use of properties in Calgary's downtown based on residential or non-residential categories.

Figure 8 Predominate Land Use Downtown Calgary

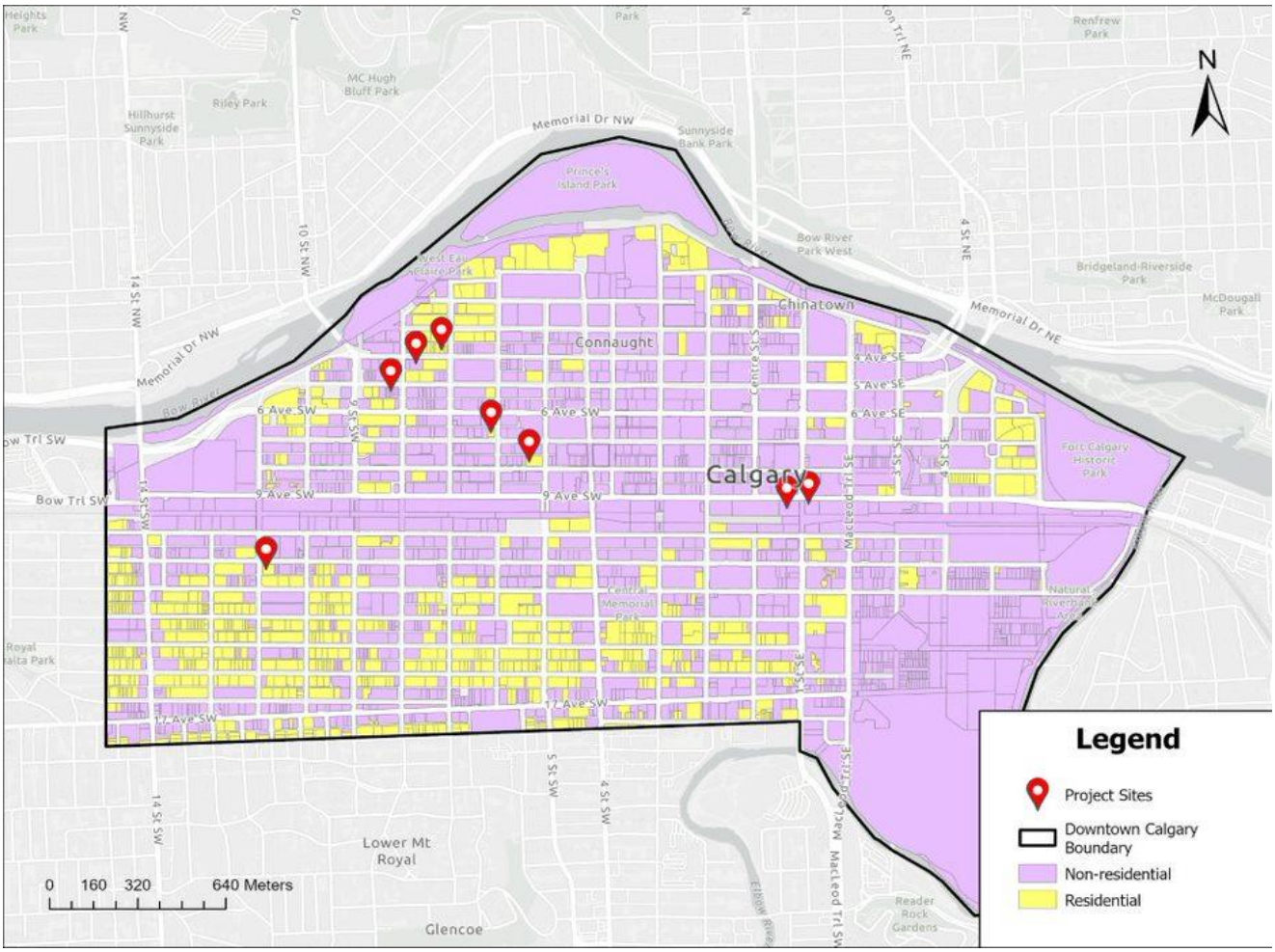


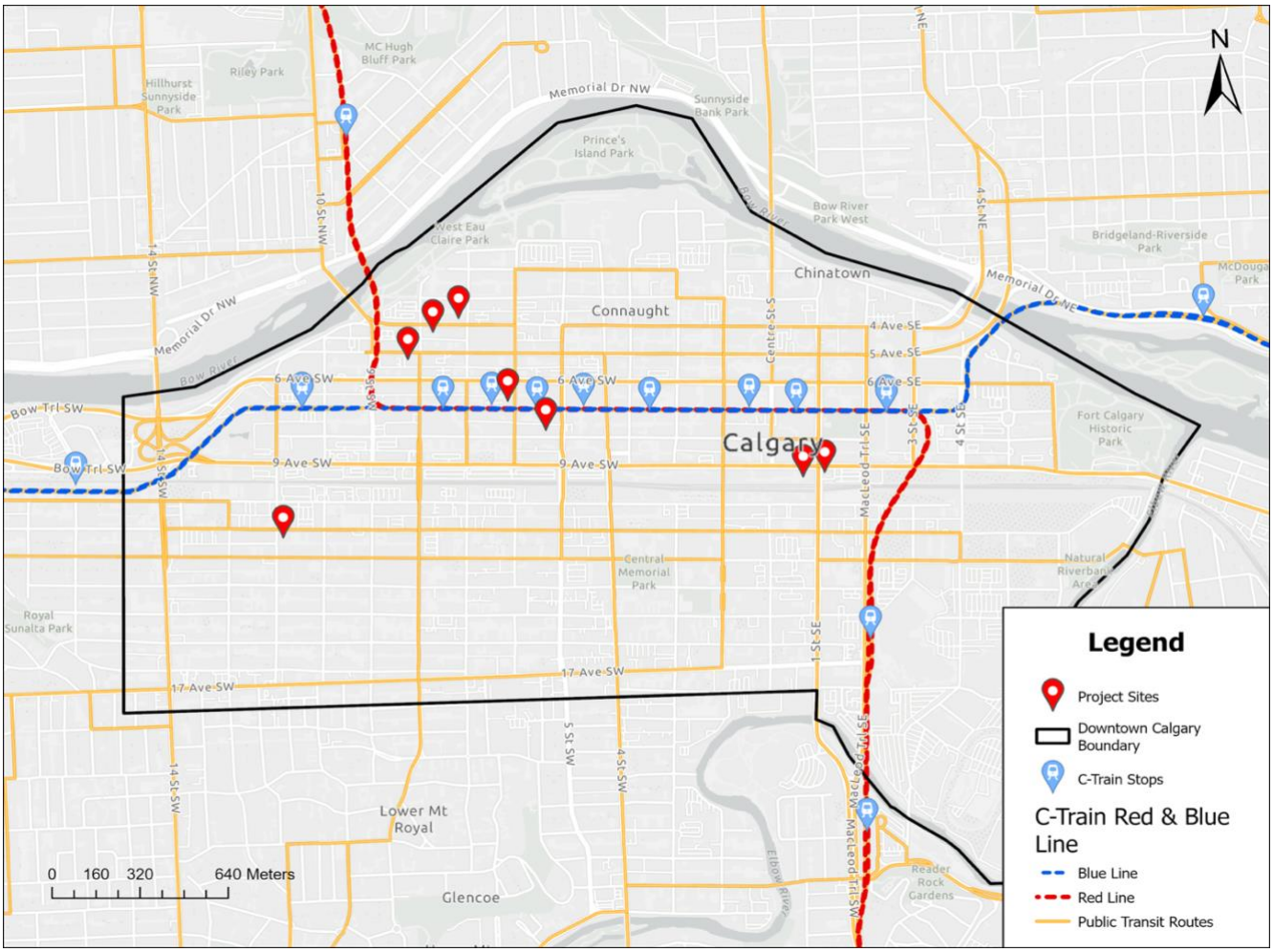
Figure 8 was created using the "Properties Predominate Use" data in the City of Calgary's 2022 property assessment. The Figure also shows that most of the residential development in the

downtown is located near the southern portion of the downtown boundary, while majority of the conversions are in the central or northern areas. More specifically, Figure 8 shows that non-residential properties almost entirely surround the conversion projects located near the central area of downtown.

5.1.3 Transit Proximity:

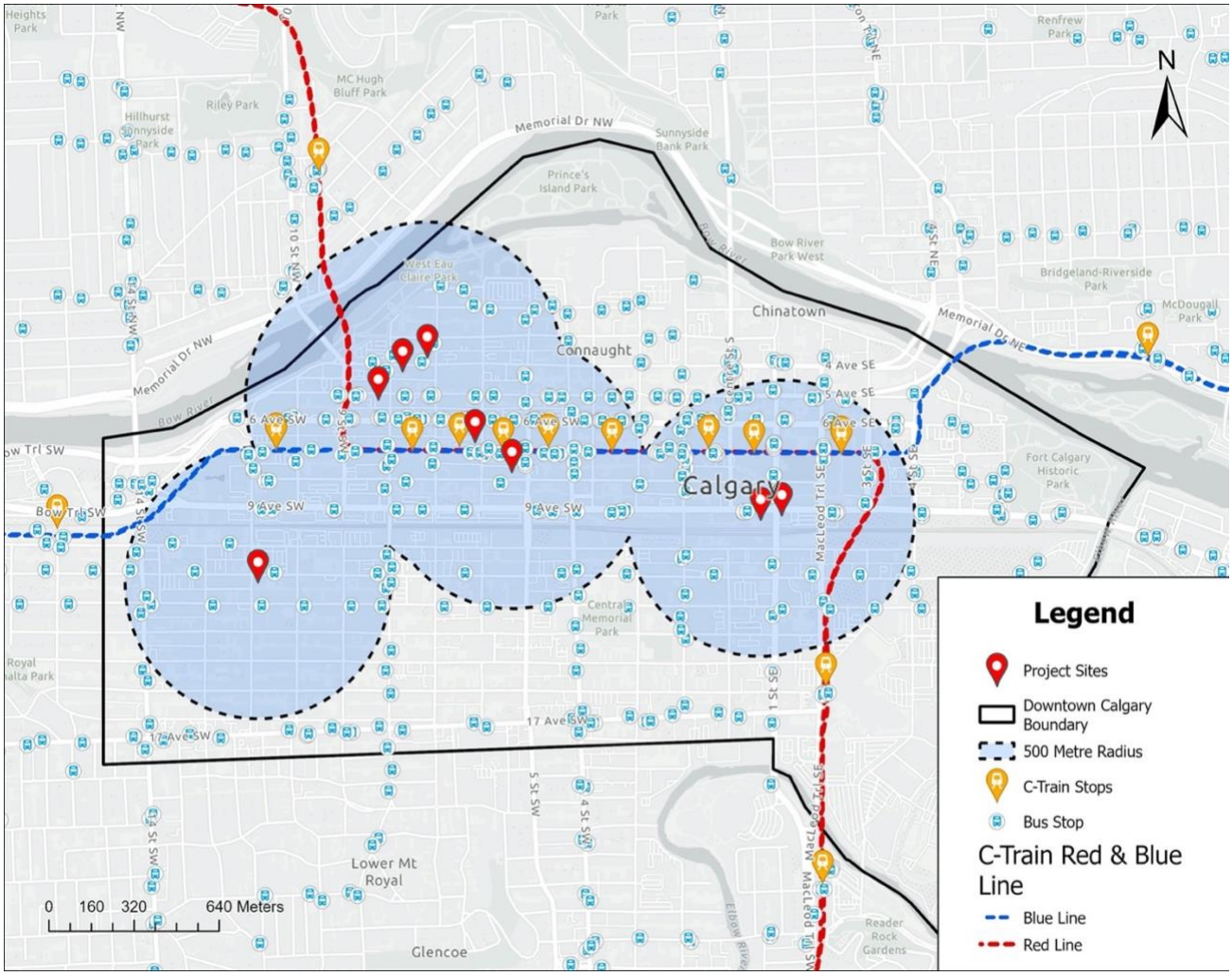
The surrounding area around each conversion project provides easy access to several bus stop locations and routes. This is shown in Figures 9 and 10 which demonstrate Calgary's office to residential conversion projects in proximity to various modes of public transit and their subsequent routes.

Figure 9 Conversion Project's Proximity to C- Train and Transit Routes



As shown in Figure 10, all the conversion projects are within a 500-metre radius of Calgary's light rail transit (LRT) stops. Additionally, one conversion project is directly along the LRT line, while another is less than 100 metres away. Close proximity to the LRT stops enables convenient transit accessibility, as the LRT Red Line services the Northwest and Southeast quadrants of the city, while the LRT Blue Line services the Southwest and Northeast quadrants. Figure 9 also illustrates that in addition to the LRT routes, public transit operates various routes extending into locations outside the downtown boundary.

Figure 10 Conversion Project's 500 Metre Radius to C-Train and Bus Stop Locations[1]

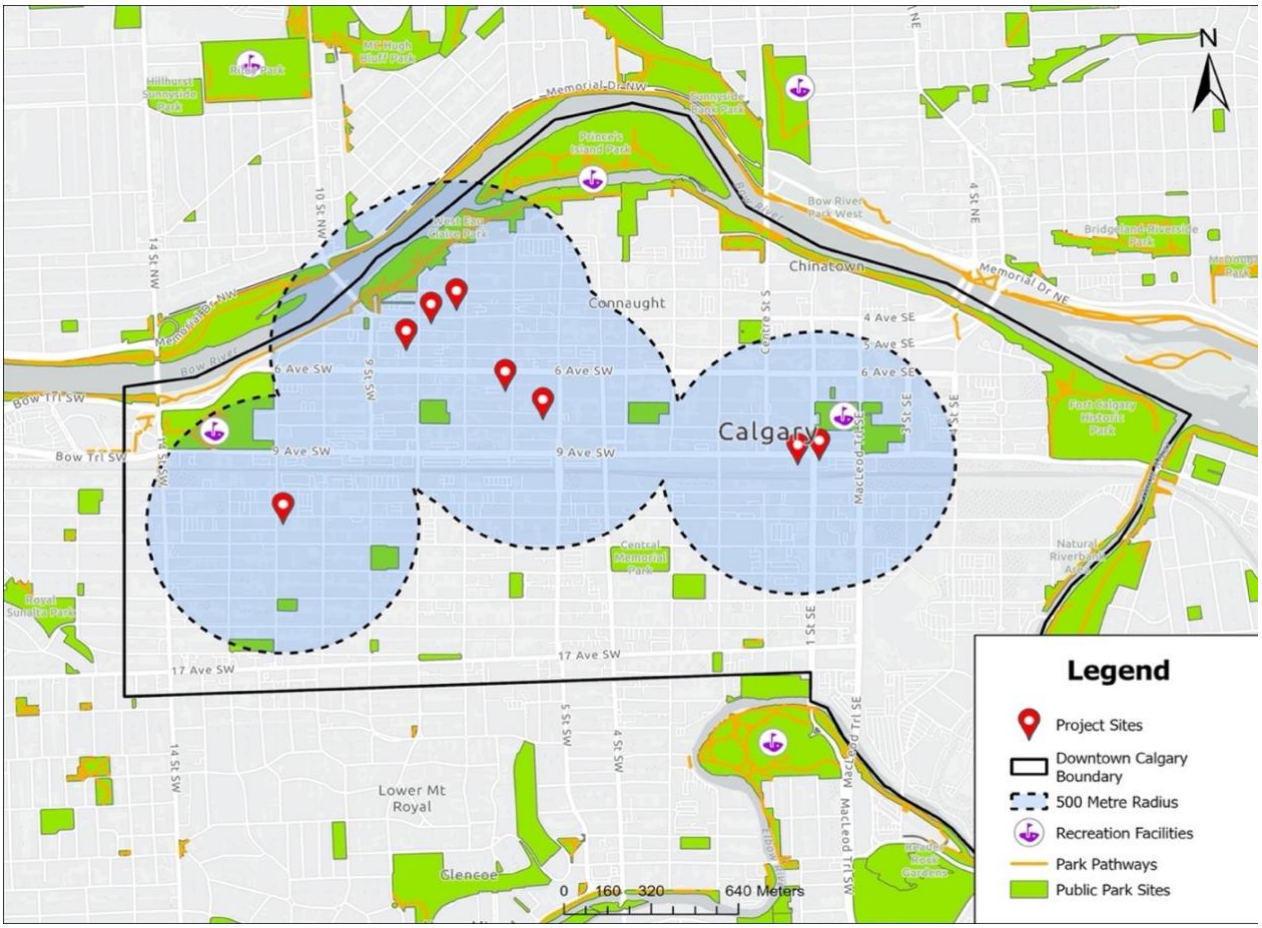


[1] 500 metre radius is calculated using the most direct path between two points.

5.1.4 Proximity to Recreational Areas

The downtown location of the office to residential conversion projects provides easy access to recreational opportunities. This is demonstrated in Figure 11, which illustrates the proximity of park pathways, indoor/outdoor recreational facilities, and public park sites to the eight office to residential conversion projects. The Figure was created using data from the City of Calgary which illustrates recreation areas operated and maintained by the City.

Figure 11 Conversion Project's 500 Metre Radius to Recreation Facilitates, Park Pathways and Public Park Sites



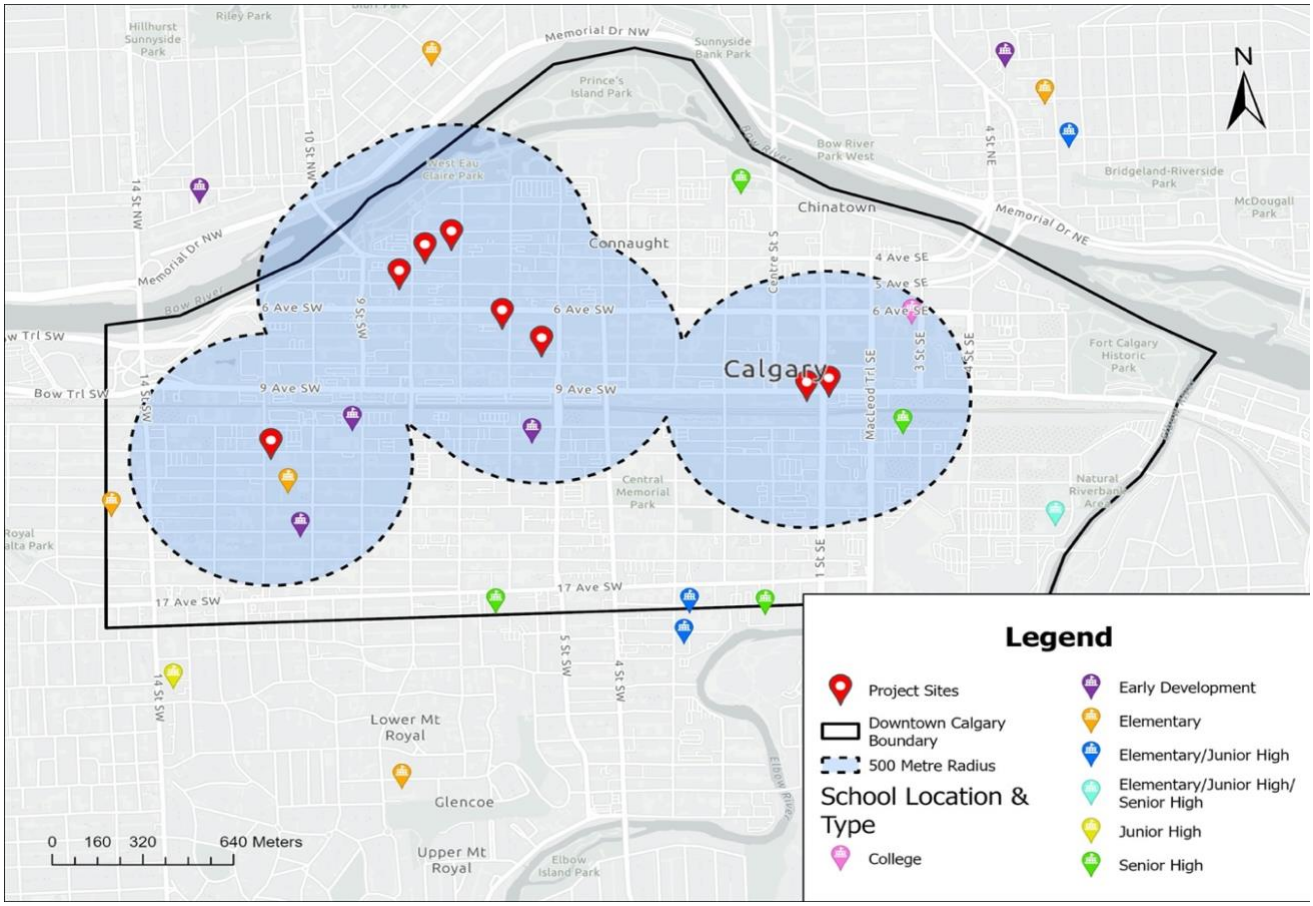
As demonstrated in Figure 11, all the conversion projects are located within a 500-metre radius of a public park site. While only two of the eight projects are within a 500-metre radius of a City of Calgary recreational facility, the downtown has three recreational facilities within its boundary, enabling residents to access these amenities easily. Figure 11 also illustrates that

while each project is relatively close to park pathways in the northern part of downtown, certain conversion projects have substantially better accessibility. For example, the Cornerstone, Canadian Centre, and United Place conversions are located in the upper northwest area of downtown, which enables easy access to the walking pathways along the Bow River. Ultimately this analysis demonstrates that the surrounding area around all the conversion sites provide relatively close access to various recreational opportunities.

5.1.5 Proximity to Educational Institutions

While the office to residential conversions are in close proximity to a variety of services and amenities, not all conversion projects offer close access to various educational institutions. This is shown in Figure 12 which illustrates the proximity of the conversion sites to educational institutions, ranging from early child development centres to universities and colleges.

Figure 12 Conversion Project's 500 Metre Radius to Educational Institutions

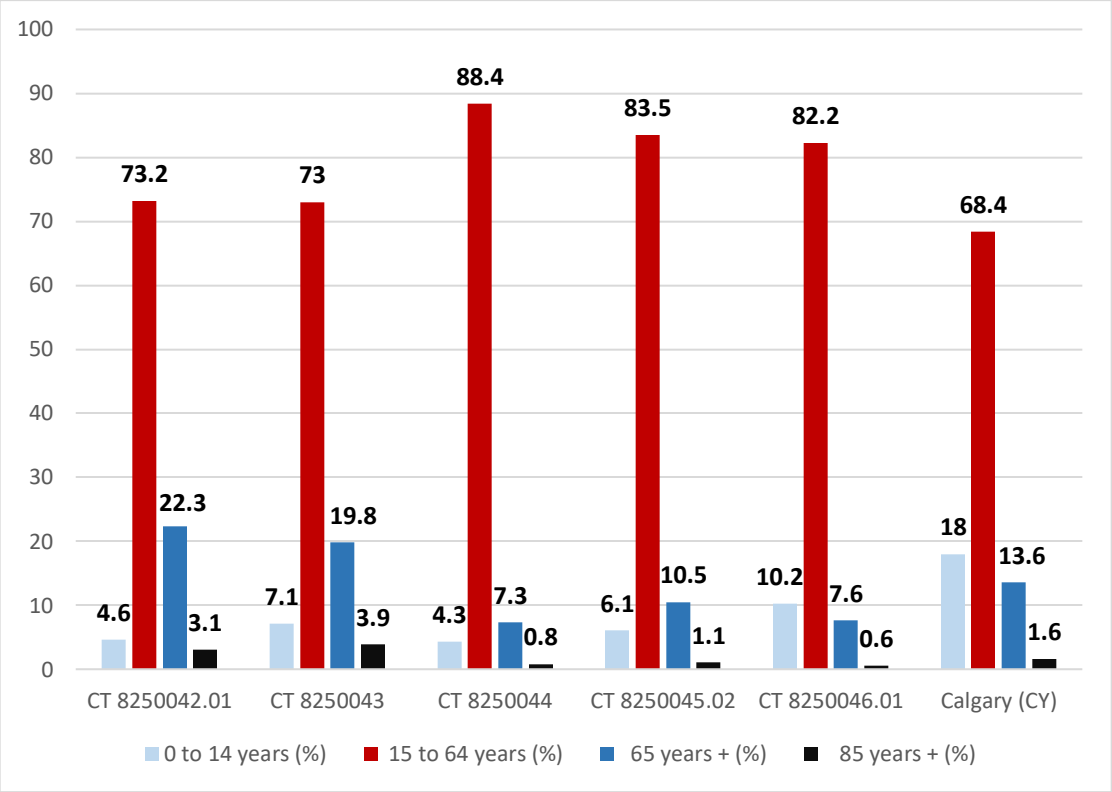


There are six educational institutions within a 500-metre radius of five conversion projects, half of which are early development centres. The remaining three projects are not within a 500-metre radius of educational institutions. However, Figure 12 reveals that the area outside downtown provides additional educational institutions and classifications. This accessibility would enable most households residing at the conversion sites to access educational opportunities at a reasonably moderate distance. However, a more significant challenge would be posed to households requiring multiple levels of education simultaneously, and as a result, household travel distances will vary.

5.1.6 Area Demographics

The average age of residents in each census tract is similar with majority of residents ranging from 15-65 years of age. This is shown in Table 3 which illustrates the population characteristics of the five census tracts in which the eight office conversions are located compared to the entire city of Calgary.

Table 3 Population Characteristics – 2021



Source: (Statistics Canada a-e, 2021).

A more detailed breakdown of these cohorts shows that roughly 30-40% of residents in the office conversions census tracts are between 25-34 years of age (Statistics Canada a-e, 2021). This is compared to the entire city of Calgary, where only 18% are within this age range. Table 3 also demonstrates that all but one of the census tracts (0046.01) has less than 10% of residents ranging from 0-14 years old. This is compared to Calgary, which has 18% of individuals between 0-14 years old. This indicates that compared to all of Calgary, these locations generally comprised more adults than children.

The average household size (#) is consistent across the five census tracts, with a range from 1.5-1.7. This is demonstrated in Table 4 which illustrates the household characteristics of the five census tracts in which the eight office conversions are located, compared to the entire city of Calgary. The Table shows that compared to the city of Calgary, which has an average household size of 2.6, the household size in these census tracts is considerably smaller. This trend is also seen with the average size of families within the five census tracts ranging from 2.3-2.5 while the city of Calgary reports an average size of 3. This reveals that most of the residential options in the census tracts accommodate smaller households and families compared to other areas in the city. Table 4 also reveals that the five census tracts report 73.0-81.7% of households currently rent compared to the entire city of Calgary, where only 31.1% of households rent. This indicates that most of the residential options already existing in the census tracts are likely focused on attracting the rental rather than the homeownership market.

Table 4 Household Characteristics-2021

	CT 8250042.01	CT 8250043	CT 8250044	CT 8250045.02	CT 8250046.01	Calgary (CY)
Average Household Size (#)	1.5	1.6	1.5	1.6	1.7	2.6
Average Size of Family	2.3	2.4	2.3	2.3	2.5	3
Rental Households (%)	77	75	76.5	73	81.7	31.1

Source: (Statistics Canada a-e, 2021).

Calgary's population change between 2016 and 2021 was 5.5, while the five census tracts had a population increase between 21.1-34.4%. This is shown in Table 5, illustrating the population change within the five census tracts compared to the city of Calgary. This data indicates that the census tracts in which the office conversions are located represent areas of population growth.

Table 5 Population Change 2016-2021

	CT 8250042.01	CT 8250043	CT 8250044	CT 8250045.02	CT 8250046.01	Calgary (CY)
Population 2016 (#)	4376	6193	7224	4651	6054	1,239,220
Population 2021 (#)	5345	7563	9322	6252	7333	1,306,783
Population Change 2016-2021 (%)	22.1	22.1	29	34.4	21.1	5.5

Source: (Statistics Canada a-e, 2021).

Semi-Structured Interview Findings

This section is separated into two parts. The first part identifies the interview findings from my interview with a Public Sector Professional involved in supporting Calgary's office to residential conversion projects. The second part examines the interview findings from my interviews with six development professionals involved in completed and ongoing office to residential conversion projects.

5.2. Public Sector Professional Interview Findings

The following section identifies my interview findings with a public sector professional. It is organized into three parts. Firstly, it highlights several strategies the City of Calgary uses to promote and undertake office to residential conversion projects in Calgary's downtown. Secondly, it acknowledges the primary considerations of the City of Calgary when approving and reviewing office to residential conversion projects. Lastly, this section identifies challenges faced by the City when facilitating office to residential conversion projects.

5.2.1 Strategies:

5.2.1.1 Incentive Program and Centre City Enterprise Area

The Public Sector Professional interviewee noted several strategies the City of Calgary used to incentivize and advance office to residential conversion projects in Calgary's downtown. The Professional emphasized the Downtown Calgary Development Incentive Program as the "catalyst" and primary strategy to incentivize developers and advance the office conversion projects. The Professional explained that previous to this program, the number of office to residential conversion projects in the downtown was minimal. After the Incentive Program's creation, interest in office conversion projects significantly increased. In addition to the Incentive Program, the Professional noted the Centre City Enterprise Area (CCEA) as another helpful strategy the city of Calgary used to help advance and promote office conversions. The Professional noted that the ability to bypass development permits for change of use through the CCEA has been particularly helpful in streamlining the conversion process, creating an additional incentive for developers considering a conversion project.

5.2.1.2 Dedicated Conversion Team

While the professional's identification of the Incentive Program and CCEA was expected as these strategies are well reported, the Professional highlighted various internal strategies that have not been widely documented. In particular, the City of Calgary created a dedicated team of professionals focused on office to residential conversions. The Public Sector Professional explained that having a dedicated team ensures that the same people review the office conversion files. This process also ensures that the planner reviewing the file is knowledgeable about what is important from both the City's and the developer's perspectives. The Professional stated that:

> Having the same people that are dedicated to this program provides consistency across the office conversion projects. It also provides certainty to the applicants that they're

> very likely to get the approvals they need, because they are being advised by someone who has experience in these projects and knows what is required in a conversion file.

The Professional also noted that having a dedicated team enabled the City to build a knowledge base. The Professional indicated that this was advantageous as it will enable the City to process files more quickly.

5.2.1.3 Importance of Working with Industry Experts

The Public Sector Professional emphasized that the City of Calgary consulted industry members to help develop programs that advance office to residential conversions. The Professional noted that all the city's initiatives on converting office buildings to new uses were developed in full partnership, collaboration, and consultation with various industry members. The Professional explained that working with consultants and industry members is vital to the conversion program, as the city lacks experience with conversion projects. The industry members and consultants know the processes, office buildings, and challenges developers face when converting them. The Professional explained that consulting with industry members provides an excellent opportunity to learn what policies and programs the City needs to adopt to appeal to developers considering such a conversion.

5.2.1.4 Flexible and Uncomplicated Policy and Programs

Another strategy highlighted by the Public Sector Professional was a flexible and simple approach to planning/building policy and the City's Incentive Program. The Professional noted that:

> We are being quite flexible on requirements for conversions in comparison to new developments because we realize that conversions are dealing with an existing structure and systems, existing access points, a set amount of parking, which if these components need significant upgrading it can be very expensive and reduce the incentive to do a conversion.

The Professional argued that being too rigid with policy is counterproductive to the City's overall goal of reducing vacant office space. Additionally, the Professional highlighted the importance of not overcomplicating conversion programs with requirements. The Professional explained that the City has a lot of broad goals for things like climate mitigation and affordable housing. While policy requirements supporting these initiatives could have been implemented as requirements in the City's conversion program, the City decided to simplify its program and focus on removing vacant office space. The Professional explained that adding a variety of requirements adds additional time and costs, which can ultimately reduce the likelihood of these projects moving forward. Additionally, the Professional argued that developers are aware that municipal funding is very competitive, which has created an incentive to align the development with the goals of the target city. As a result, several of the approved projects in Calgary have submitted proposals with initiatives supporting climate mitigation and/or affordable housing without the City specifically requiring it.

5.2.2 Considerations

5.2.2.1 Primary Focus on the Existing Building

The Public Sector Professional outlined the City's primary considerations when approving office to residential conversion projects in downtown Calgary. As expected, the Professional noted that in terms of location criteria, the conversion projects must be in the Greater Downtown Area as that is where most of the office vacancy is occurring. The Professional explained that if the conversion requires a development permit, the City conducts an analysis of the impact that the conversion would have on the existing site, surrounding neighbourhood, and/or transportation. However, most conversions do not require a development permit due to the CCEA. This has resulted in the City primarily focusing on the existing building rather than the surrounding environment when reviewing and approving conversions. The Professional explained that not all office buildings are conducive to residential conversions due to key technical components such as large floor plates, window access, and location of corridor shifts. The Professional stated that:

> In most cases we have cared less about the site and surrounding area, and more about ensuring the existing building can support residential units. There are some key measurements that are sort of deal breakers, and we want to ensure that if we provide support to a project, it is actually feasible.

While the primary focus has been on the existing building, the Public Sector Professional did note that the City is beginning to consider neighbourhood services and amenities in tandem with the existing building. The Professional highlighted that as more residential conversions proceed, the City wants to ensure adequate services and amenities to support new residents downtown.

5.2.3 Challenges

5.2.3.1 Challenge of Sustaining Funding

The Public Sector Professional highlighted that from the city's perspective, downtown Calgary's office to residential conversions have been extremely successful. The Professional emphasized that the City has experienced no significant challenges with the office conversion program and past or current projects. Instead, the Professional argued that sustaining funding is the biggest challenge moving forward. The Incentive Program is almost out of funding for the already approved projects. The Professional explained that the Downtown Strategy team faced a challenge in getting more funding from Council as once the existing funding is gone, the Incentive Program won't be able to carry on, which creates risks for future projects. The professional stated that:

> There is no shortage of interest in conversion projects, it will just come down to, is there going to be a shortage of funding.

5.2.3.2 Lack of Experience with Funding Agreements

The Professional explained that to get funding for an office to residential conversion, the applicant must enter into a legal agreement with the City outlining everything that must be executed to be reimbursed. The applicant is not paid until the project is built. The Professional highlighted that creating these legal agreements is a new process for the City as a program like this has never existed. The Professional noted that it had been a minor challenge working through what requirements to include, noting that:

> There are certain things that we thought were okay to include but the developers felt that they were too risky. So, there's been a lot of having to negotiate on what to include in contracts which can be time consuming.

5.3 Development Professional Interview Findings

The following highlights my findings with six development professionals involved in office to residential conversion projects in Calgary's downtown. This section is divided into two parts: identifying specific opportunities developers have faced by undertaking office to residential projects in Calgary and identifying challenges that developers have faced when facilitating office to residential conversions.

5.3.1 Opportunities

5.3.1.1 Opportune Location

The development professionals identified several features in Calgary's downtown that resulted in an excellent opportunity to undertake an office to residential conversion. One of the most mentioned features was easy access to public transit, specifically the LRT stations (noted by all development professionals). Three development professionals highlighted easy access to public transit as a key contextual factor when selecting an office building to convert to residential use. Development Professional 6 noted that:

> Having the C-station only a few blocks away and several bus stops around and throughout the downtown contributed to the site location being exceptionally favourable for a residential development.

Development Professionals 1, 2 and 3 also support this claim by noting that a significant disadvantage of conducting an office conversion outside of a central location such as downtown, is that there is often less public transit servicing and frequency. Development Professional 3 suggested that a lack of public transit accessibility can reduce the appeal of office conversion to potential residents. Development Professionals 1 and 2 also noted that for office conversions focused on providing affordable housing, the opportunity to conduct a conversion in a location with various public transit options was crucial. They suggested that often affordable housing developments deal with vulnerable populations who rarely have access to private transportation. As a result, having the opportunity to convert a building in a location with close access to public transportation enabled them to provide future residents with access to important amenities.

Accessibility to various forms of active transportation infrastructure in Calgary's downtown was another frequently mentioned opportunity. Development Professional 4 highlighted that the downtown location, particularly the northern portion, is an optimal location for active transportation. The Development Professional noted that the downtown is just adjacent to the Bow River, which has well-maintained cycling and pedestrian pathways. Development Professional 5 noted that accessibility to bike infrastructure provided in locations such as downtown is becoming significantly more important from a marketing standpoint. The Professional explained that the ability to provide access to active transportation helps attract residents to units once the conversions are complete. Development Professional 5 also connected the accessibility of active transport in downtown to an opportunity to reduce the required parking by indicating that:

> Our conversion is very close to the City of Calgary cycle network and very close to the Bow River pathway system. Technically we are short on parking from a bylaw requirement perspective, yet I don't think the city is going to have an issue with us not meeting the requirement as we have great accessibility to bike infrastructure and walking pathways.

Another frequently mentioned feature provided by the downtown location was easy access to various services and commercial amenities. Development Professional 3 stated that when looking at the location for a multi-family development, one significant factor is easy access to grocery stores. The Development Professional highlighted that the location of a residential conversion in downtown is advantageous as it enables residents to access a variety of required amenities within a short distance. Development Professional 6 supported this point stating that:

> Access to amenities is another thing that contributed to our project site's location being favourable for a residential development. I mean, Calgary's downtown isn't that large so it's very easy to access a variety of amenities especially with public transit access so close.

5.3.1.2 Financial Advantage

Another opportunity identified by the development professionals was the potential for financial savings. Specifically, four of six development professionals interviewed said that converting an existing office for residential use can provide financial savings if properly executed. Development Professionals 1 and 3 explained that with conversion projects, most of the structure and technical components such as elevators and staircases are already constructed. They argued that this leads to cost savings if these components are in good condition and can be reused. Development Professional 5 also noted that most buildings in Calgary are under 40 years old, which is relatively new compared to some cities where most buildings are over 100 years old. The Development Professional explained that while there are

issues with existing infrastructure, the moderate condition of most buildings in Calgary enables more reuse and subsequent cost savings for developers. Development Professionals 4 and 6 connected a cost savings opportunity to the required labour and fees associated with demolition. They both noted that because conversions reuse major building components the financing required to undertake demolition is reduced compared to new construction. It is important to highlight that five of the development professionals cautioned that the potential cost advantages are highly dependent on the existing condition of the building and the scope of the desired project. Development Professional 3 stated that:

> The building condition greatly impacts the cost of the conversion. You might have to replace all the windows, so that's a big number, you might have to replace elevators, or not have enough parking and that significantly drives up costs and makes these projects not cost effective.

Development Professionals 1 and 2 connected the financial opportunity provided by undertaking an office to residential conversion to generating more donor interest. They explained that while their conversion focused on providing affordable housing, converting a vacant office enabled the project to be viewed as an opportunity to revitalize the downtown. Both professionals agreed that being perceived as a project that revitalizes downtown instead of strictly an affordable housing development created more funding opportunities that would have been previously unavailable.

Another financial opportunity addressed was the eligibility to access funding provided by the City of Calgary (noted by all development professionals). All six development professionals explicitly stated that without financial support from the city, their respective companies would not be pursuing an office to residential conversion project in downtown Calgary. Additionally, four of the development professionals interviewed noted that funding opportunities were the primary reason for considering an office to residential conversion and

that these projects would not be financially feasible without the funding. Development Professional 5 noted that:

> From our perspective, the project would not have been feasible without the grant, and we definitely would not have purchased the building had we not had confirmation that we would be eligible for City funding.

Three development professionals linked municipal funding to mitigating financial risks for developers taking on office conversions. Development Professional 6 explained that with new construction, the risk is lower as the developer completely controls the design, construction quality, and building systems. With conversions, the financial risk is higher because developers do not have complete control over the development as most of the structure is already present. Therefore, financial support from the City is crucial as it lessens the financial burden on the developer and mitigates the financial risks the developer takes on if costly challenges arise. While access to funding was vital for the current office conversion projects, Development Professionals 4 and 5 emphasized the need for the city to re-examine future funding for conversion projects. The Professionals argued that the current rate of 75 dollars per square foot of office space converted under the Downtown Calgary Development Incentive Program would not be enough to incentivize developers to undertake future office conversions. Development Professional 5 explained that developers in Calgary are converting office buildings that are the easiest to do. The remaining stock will be significantly more complex and as a result, more challenging to successfully convert.

5.3.1.3 Time Advantage

The ability to construct a residential development in a shorter period due to conversions was another frequently identified opportunity by the development professionals (noted by five out of six development professionals). Development Professional 6 identified that a considerable incentive for undertaking an office to residential conversion project is the reduced

time it takes to bring units to market compared to new construction. Development Professional 3 supported this point by stating:

> Our company has developed several high rises and from planning design, approvals, to building them it can be four to five years. Whereas you can do an office to residential conversion, say 100-unit conversion, in about one and a half to two years.

Three of the development professionals interviewed correlated the time advantage of conversions with the reuse of existing building infrastructure. Additionally, five of the participants highlighted that the strong administrative and policy support from the City of Calgary provided a significant time advantage. Development Professional 3 indicated that compared to other municipalities, the City of Calgary has created a system that is the fastest and easiest to get permitting for office conversions. All development professionals interviewed connected this efficiency to the City's extremely flexible and understanding policy and approvals process. Specifically, Development Professional 4 explained that the City has been willing to negotiate on various development and building requirements. Development Professional 3 added to this point by suggesting that flexible municipal policy is crucial for most conversions as meeting standard development codes often requires renovations which can be extremely timely and costly. The Development Professional explained that with new construction, the developer can control the building envelope and design, enabling them to build the development to code. In comparison, with office conversions developers are stuck with the existing building envelope, many of which do not meet today’s residential building codes.

Development Professionals 1, 2, 5 and 6 also connected the shorter development period to the City of Calgary creating an integrated team of professionals who prioritize issues for office conversions. Development Professional 5 stated that:

> The City is doing a pretty good job having an integrated team made up of people from a variety of departments. For me, this is very valuable in terms of streamlining the approvals process and having issues quickly addressed which is actually quite a big incentive.

Development Professional 1 also stated that:

> The City's team has been extremely willing to look at things quickly and individually as issues came up. Even prior to construction, we had several people from different departments helping us identify what issues we are going to have with the project and how to address them. With the conversion project there has just been a different level of engagement from the city which has really sped up the process.

Development Professionals 3, 5 and 6 also explicitly noted the CCEA program as providing a time advantage for developers in Calgary.
Development Professional 6 stated that:

> The Enterprise zone which removes the requirement of development permits in the downtown core gave us a lot of comfort when deciding to do the office conversion. Through this process we have been able to save a lot of time and it makes sure we don't have to deal with a development permit that slowed the project down during the approval stage.

5.3.1.4 Favourable Market Conditions

All of the development professionals also spoke about Calgary's real estate market providing a cost-effective development opportunity for undertaking office to residential conversion. Development Professional 2 explained that:

> Calgary has significant office vacancy. If we were in a more competitive market, it wouldn't have been worth it at all because of the value of the building. Because the market conditions were favorable it allow you to get really good price for an office building.

Development Professional 3 also emphasized that:

> High office vacancy is what makes conversions work. If we were in Toronto or Vancouver, these conversion projects wouldn't work because the vacancy is lower, which results in the value of the buildings being higher, making these projects less financially feasible.

Development Professionals 3, 5 and 6 also highlighted that there is currently a strong demand for residential units in Calgary. Development Professional 3 suggested that increases in migration to the city and limited supply, particularly in well-connected areas such as downtown, has created high demand for residential development. The Development Professional emphasized that this has created a cost-effective opportunity for developers as it enables them to convert buildings with a high probability of generating profit once the conversions are complete.

Developer 6 emphasized this point by stating:

> For office to residential conversions to be feasible, there must be a residential demand to fill the units. Otherwise, you are adding more residential units that will just sit empty and result in a financial loss for all parties involved.

5.3.1.5 Environmental Opportunity

The development professionals also frequently identified office conversions as an opportunity to help support environmental sustainability (noted by four development

professionals). Development Professionals 3, 4 and 5 connect their office conversion projects to helping reduce greenhouse gas emissions. Development Professional 5 suggested that reusing the existing building reduces embodied carbon in the building from going to waste. Development Professional 3 also highlighted that the emissions released during conversions are significantly lowered due to the construction being shorter and less in scope than new construction. Development Professionals 3, 5 and 6 also highlighted that office conversion provides the opportunity to reduce the number of materials going to the landfill from demolition. Development Professional 3 stated that from the four office conversions the development company has completed in the province, they have saved roughly 56,000 tonnes of building materials ending up in the city's landfill.

5.3.1.6 Opportunity to Benefit the Community.

Development professionals also noted that undertaking an office conversion presented developers with the opportunity to provide benefits to Downtown Calgary and the City (noted by four development professionals). Development Professionals 1 and 4 explained that providing more housing options through office conversions helps attract people and activity back into the downtown. Both development professionals agreed that office conversions can positively impact the area surrounding businesses that have seen reductions in patronage due to high office vacancies. Development Professionals 3 and 4 noted that office to residential conversions will add value to the property site and surrounding area if constructed properly. Development Professional 4 connected the opportunity to increase property value with enabling the municipal government to generate more property tax revenue from the once vacant site and surrounding properties. Development Professionals 1 and 2 also highlighted that office conversion projects employ residents across the city. Both development professionals indicated that these projects require a variety of skills from various sectors, creating several employment opportunities.

5.3.2 Challenges

5.3.2.1 Limited to the Existing Building Layout and Envelope.

One of the most frequently noted challenges identified by the participating development professionals centred around limitations that arise from working with an existing building layout and envelope (noted by four out of six development professionals). Development Professional 6 explained that new construction developers can ensure that a residential building is designed to a particular specificity to guarantee that the design maximizes the use of space. Additionally, the use of space is designed to maximize potential profit. However, with office conversions, the building and layout are already constructed, forcing developers to design a residential development in an area that is not always conducive to the best use of space. Four development professionals highlighted that a particular cause of this is that many of the existing office buildings have floor plates that are too large for an efficient residential design. Development Professional 5 explained that when the floor plate is too large, developers cannot get efficient spacing between the exterior wall of a unit, the hallway, and the entrance to another unit.

Development Professionals 3, 4 and 5 also emphasized that using the existing layout is particularly challenging when designing units. Development Professional 5 explained that some office buildings are not square, which forces the developer to create units that are not uniform and are sometimes oddly laid out. The Development Professional indicated that unfortunately, this can be unattractive to prospective tenants and subsequently reduce profit. Additionally, Development Professional 4 emphasized that new construction allows for potential cost savings through adjusting the design or adding/removing. Unfortunately, working within an existing building restricts developers from having this cost-saving option.

Development Professional 4 expanded on the challenges of working within an existing building envelope beyond the design stage to the demolition process. They explained that many building systems were installed when the office was first constructed. Unfortunately, because the building envelope is intact, the developer must cause significant damage to areas

of the building and pay for expensive machinery like cranes to remove old building systems like an HVAC or chiller during demolition. This is compared to new construction, which can easily remove these systems during a full demolition. Development Professional 4 summarized these challenges, explaining:

> I understand why somebody would think there would be substantial cost savings from these projects as you have all the infrastructure in place. But there is a big price tag that comes with making the existing building envelope work for a residential development.

5.3.2.2 Old Building Systems

Another challenge highlighted by development professionals is that existing office building systems are unable to support residential developments (noted by all development professionals). Development Professionals 3 and 4 highlighted that most of the conversions in Calgary's downtown have older systems such as heating, ventilation, air conditioning, plumbing, fire protection, and electrical that are outdated or at the end of their life. Development Professional 5 explained that while these systems may still function for an office system, the additional load of a residential development is beyond the existing servicing capacity. Development Professional 5 stated that:

> Most Office buildings already have shower facilities, kitchen facilities and bathrooms, but all of these are shared amenities. With residential development you are going to need these amenities in every unit and have the system capacity to be running majority of them at the same time.

Development Professionals 3, 4 and 5 emphasized that upgrading or replacing existing building systems has resulted in significant financial challenges for developers taking on these types of conversions. Development Professionals 3 and 4 suggested that upgrading an office's electrical infrastructure for residential use is usually between $1.5-2 million. Additionally, they noted that average lead times for getting and installing significant building infrastructure take roughly a

year and a half to two years. Development Professional 4 connected this to the importance of developers creating a detailed outline for the feasibility of a conversion project stating that:

> It's extremely important to have a solid game plan to know where to draw the line on feasibility. Issues with the building envelope and mechanical systems can increase costs exceeding what it would actually cost to build a brand-new building.

Additionally, all the development professionals interviewed connected issues with the existing building systems and infrastructure to the importance of doing extensive inspections prior to undertaking a conversion project. Development Professionals 3 and 4 suggested that all developers should maximize the time spent on due diligence Development Professional 4 emphasized that having physical access to the building and doing your own inspections on the current systems and infrastructure is crucial as that is where significant financial challenges will often arise.

5.3.2.3 Challenge with Municipal Policy

All the development professionals interviewed emphasized that the City of Calgary has been supportive and flexible with its planning policy to make the conversion projects feasible. None of the professionals interviewed indicated any significant challenges from municipal policy that has hindered the undertaking of office conversion projects. Development Professional 5 did note that a by-product of having the city as a financial partner on conversions is that the City has specific policies and goals around energy efficiency outcomes, climate change and affordable housing. The Development Professional explained that while the City is extremely willing to negotiate, there has been some push for developers to support these initiatives where possible, as the City is providing funding for the project. As a result, the Professional feels there is slightly less autonomy for developers regarding design and amenities than if the developer was financing the project independently. Development Professionals 1 and 2 also suggested that while municipal policy did not create challenges for office to residential conversion, policy surrounding funding requirements from the Federal government

can be challenging to meet. Development Professional 1 explained that Federal government funding for residential development is often directly connected to achieving goals such as sustainability and universal design. These programs result in funding requirements to support these initiatives but do not consider specific challenges conversions face. Development Professional 1 explained that there is much less flexibility for developers to negotiate the requirements of the projects because Federal funding is often tied explicitly to achieving these initiatives.

Table 6 Summary of Opportunities and Challenges Identified by Development Professionals

	Development Professional 1	**Development Professional 2**	**Development Professional 3**	**Development Professional 4**	**Development Professional 5**	**Development Professional 6**
Opportunities						
Advantageous Location	**X**	**X**	**X**	**X**	**X**	**X**
Financial Advantage	**X**	**X**	**X**			**X**
Time Advantage	**X**	**X**	**X**	**X**	**X**	**X**
Favourable Market Conditions	**X**	**X**	**X**	**X**	**X**	**X**
Supporting the Environment			**X**		**X**	**X**
Supporting the Community	**X**	**X**	**X**	**X**		
Total	**5/6**	**5/6**	**6/6**	**4/6**	**4/6**	**5/6**
Challenges						
Limitations with Existing Layout and Envelope			**X**	**X**	**X**	**X**
Old Building Systems	**X**	**X**	**X**	**X**	**X**	**X**
Government Policy	**X**	**X**			**X**	
Total	**2/3**	**2/3**	**2/3**	**2/3**	**3/3**	**2/3**

6.0 Analysis and Discussion

This section connects the concepts explored in the literature to the findings that emerged from the semi-structured interviews and context analysis. Patterns, relationships, connections, and areas of significance are analyzed in this section to help address the study's research questions. The research findings are analyzed to examine the use of financial incentives, flexible planning policy, the creation of a dedicated conversion team, and a soft governance approach as effective strategies to advance office to residential conversions. This section also uses the research findings to interpret favourable market and urban opportunities encountered by developers when converting vacant office space into housing in Calgary. Additionally, this section identifies specific challenges faced by the municipal government and developers when undertaking conversion projects. This analysis will identify pertinent lessons that can be evaluated by other cities considering similar office to residential conversion projects.

6.1 Municipal Funding as a Stimulus

The interview findings revealed that the key impetus for office to residential conversion projects in Calgary has been financial support from the municipal government. The Public Sector Professional described the municipal government's funding program as the "catalyst" for office conversion projects in the city. All the development professional interviewees agreed with this claim, explicitly stating that without funding support from the municipal government, their company would not be undertaking an office to residential conversion in Calgary. In addition, four out of six development professionals suggested that the financial risks and challenges associated with conversion projects are too high to finance without the support of municipal funding. These findings reinforce existing adaptive reuse studies identified in the literature review. For example, Stas (2007) found that government financial grants positively affected developers' ROI, which significantly influenced their decision to undertake an adaptive reuse project. Aigwi et al. (2021) also found that there needs to be an apparent economic gain for developers to willingly undertake the financial risks associated with adaptive reuse projects, which government funding can help support. The accumulation of these results suggests that financial support provided by the City of Calgary has had a favourable impact on the decision

making of developers to undertake office to residential conversions. By providing funding support, the municipal government has created an opportunity for developers to undertake a potentially profitable conversion project with less financial risk. This opportunity has facilitated a city context where developers are interested and willing to take on projects previously viewed as financially unfeasible. Other cities examining potential strategies to promote and undertake office to residential conversions should examine potential options for municipal funding support to mitigate risk and thus incentivize potential developers.

6.2 Importance of Flexible Planning Policy to Mitigate Challenges

The literature surveyed for this project found that meeting current planning and buildings codes is both a significant challenge and a disincentive for developers considering adaptive reuse projects (Stas, 2007; Conejos et al., 2016; Bullen & Love, 2011; Remøy & van der Voordt, 2014). Several studies argued that an effective strategy to mitigate this issue is for municipalities to be flexible with their building and planning policy requirements for office conversions (Heath, 2001; Bullen, 2011; Remøy & van der Voordt, 2014). The findings generated during the semi-structured interviews largely support this claim. The Public Sector Professional noted that the City of Calgary used a flexible and negotiable planning policy on issues that did not jeopardize the health and safety of residents to reduce challenges for conversions. The Professional advocated for this approach, claiming that being too substantive and rigorous with policy requirements creates a significant time and cost disincentive for developers, which ultimately hinders the city's goal of reducing vacant office space.

The impact of the City's flexible policy approach was further emphasized in the interviews with the development professionals. Five professionals connected the City of Calgary's flexible policy to a significant time and financial incentive for office conversion projects. Development Professional 3 indicated that compared to other municipalities, the policies adopted by the City of Calgary are the most conducive to advancing office to residential conversions. Several development professionals connected this to the CCEA policy, eliminating the need for a development permit for several of the projects. Development Professional 4 indicated that without the flexible and negotiable development policy, the financial feasibility

of the office conversions would be jeopardized, as the existing building would require extensive renovations to meet residential code.

Despite the existing literature identifying building codes and policy regulations as one of the most challenging barriers facing office to residential conversions (Bullen & Love, 2011; Remoy & van der Voordt, 2014), none of the professionals identified the city's policy regulations as being a significant challenge. Instead, the participating development professionals identified the technical challenges of office conversions as their primary barriers. All the development professionals interviewed argued that a significant challenge was that existing building systems required costly upgrades to meet residential capacity. In addition, several of the development professionals also noted that the existing layout and floor plates created significant challenges when aiming to maximize profitable space and suite design. This evidence demonstrates that the City of Calgary's strategy of negotiation and flexibility with its planning and building policy has created a regulatory environment that increases the feasibility of office to residential conversions for developers. In turn, this has incentivized developers to undertake office to residential conversion as they are viewed as viable projects. It can then be concluded that flexible policy is an effective strategy for municipalities to incentive and advance office to residential conversion projects.

6.3 Dedicated Office Conversion Team

A key theme highlighted in the interviews with public and private professionals was the value of having a dedicated team from the city reviewing and supporting office to residential conversion projects. The Public Sector Professional argued that this strategy has allowed the city to ensure that developers are well-informed and has provided consistency across office conversion projects. Additionally, this strategy has created a knowledge base within the organization, allowing the City to work through office conversion applications faster. The Public Sector Professional suggested that having this dedicated team creates an incentive for developers as it increases the likelihood of approval for the conversions because they are well-informed on the requirements. Three development professionals interviewed supported this claim by explicitly linking the City of Calgary's dedicated conversion team to providing a

considerable time advantage for conversions compared to new construction. Development Professional 1 noted that this was particularly helpful in getting the project moving during the early stages, as the city quickly identified the issues and how to address them. Development Professional 5 noted that this was highly appealing to developers because the approval process is streamlined, and issues were quickly addressed.

Surprisingly, an examination of the existing literature on adaptive reuse projects did not reveal any discussion around specific conversion "teams" being used as a potential strategy to support adaptive reuse projects. During the interview, the Public Sector Professional did indicate that Calgary's "dedicated office conversion team" was an internal process rather than one that is publicly documented. This lack of public reporting could explain why similar strategies have not been widely reviewed in previous literature. Despite the lack of previous discussion, the interview findings have shown that the City of Calgary's use of a dedicated conversion team has enabled the city to refine their conversion knowledge and has ensured that developers undertaking office to residential conversions are better supported. The findings then indicate that this strategy should be viewed as an effective opportunity for municipal governments to support and incentivize office to residential conversions in cities.

6.4 Soft Governance Approach

As highlighted in the existing literature, several authors have advocated for a "soft governance" approach to office to residential conversions. Clifford et al. (2019) explained that this approach requires municipal governments to undertake a central role in identifying and encouraging developers to consider conversions through various mechanisms. This includes the creation of information-sharing networks between the public and the private sectors and using best practices like flexible planning policy to ease conversions, all while ensuring building regulations continue to enforce crucial residential standards (Clifford et al., 2019; Remoy and Street, 2018). Numerous studies have contrasted this approach with a market-oriented strategy of entirely deregulating office conversion development to incentivize potential developers. Criticism of the deregulated approach often stems from issues around office to residential conversions in locations that do not meet residents' needs and/or produce poor-quality

housing. As a result, several studies have revealed that a soft governance approach delivers higher-quality housing and similar levels of office-to-residential conversion compared to a deregulated approach (Clifford et al., 2019; Canelas et al., 2022).

When comparing various office to residential governance styles identified in the literature to the City of Calgary's approach, it became evident that a "soft governance" was adopted in Calgary. Evidence of this was revealed during the participant interviews. The Public Sector Professional identified that aligned with a soft governance approach, the City of Calgary played a central role in encouraging developers to consider conversions through their incentive program. The Public Sector Professional cited the Downtown Calgary Development Incentive Program as the "catalyst" for conversion projects in the downtown. Evidence of Calgary's soft governance approach was also found in the city's creation of information-sharing networks between the public and the private sectors. During the Public Professional interview, it was revealed that the city's office conversion initiatives were in full partnership, collaboration, and consultation with industry members. The Professional argued that this was a crucial step, as the city was not experienced in conversion development. As a result, the industry members knew what it would take for developers to take on office to residential conversions. In addition to this evidence, previous discussion has identified that the City of Calgary adopted a flexible planning policy, further aligning with Clifford et al. 's (2019) framework for soft governance. This strategy has enabled the City of Calgary to reduce barriers to conversion development while ensuring that it remains involved in the regulatory process. Additionally, the City has been able to regulate the location of projects as the incentive program is limited to Calgary's downtown boundary. This has enabled the City to ensure that the conversion projects are located in areas that they have approved as suitable for residential development. While the majority of the office to residential conversion projects in Calgary are in the early stages, past studies suggest that the City's use of a soft governance framework has positioned these projects to effectively reduce vacant office space while delivering quality housing options that meet the needs of residents.

6.5 Influence of Market and Urban Environment

When considering the results from the interviews of development professionals and the context analysis, evidence suggests that the existing real-estate market and urban environment in Calgary's downtown have created a favourable opportunity for office to residential conversions. Firstly, all the participating development professionals indicated that the high office vacancy in Calgary's downtown had created a market for office to residential conversion in the city. Development Professional 3 explained that because the office market is not competitive due to high vacancy, a market environment has been created where developers can purchase office buildings to convert at a more cost-effective price. In addition to this, four of the development professionals interviewed identified that there is currently a strong demand for residential units in Calgary. Development Professional 3 suggested that increases in migration and a limited housing supply, particularly in popular areas like downtown, have created high demand for residential development. This ultimately suggests that Calgary's current office space and residential markets have favourable conditions for developers to undertake office to residential conversions.

In addition to the existing markets, evidence from this study's context analysis and participant interviews indicates that the downtown's urban environment has provided a complementary opportunity for office to residential conversions. Figure 8 of the context analysis reveals that most properties in Calgary's downtown have a predominant use that is non-residential. A deeper examination further uncovered that most of the current residential use downtown is located at the southern portion of the downtown boundary. Interestingly, seven of the eight office to residential conversion sites are located in the centre and northern portion of downtown, where there is the least residential use. Additionally, Table 5 in the context analysis confirms the increasing demand for residential options downtown. The five census tracts where the conversion projects are located saw a population increase between 21.1-34.4%, compared to Calgary's 5.5% increase. The combination of these results suggests that the lack of residential use in Calgary's downtown has provided a clear opportunity and incentive for developers in an area with minimal market competition. Moreover, significant increases in population due to booming economic conditions and interprovincial migration have

contributed to favourable market conditions for the developers to generate a profit from the conversions once the projects are complete.

The existing services and amenities in downtown Calgary also emerged as a central theme when discussing the influence of the urban environment on the viability of office to residential conversion projects. According to Remoy & van der Voordt (2007), finding a central location for housing development can be difficult, while finding a centrally located vacant office building to convert is often easier. The existing literature suggests that this enables developers to capitalize on the existing services and amenities (Remoy & van der Voordt, 2007; Olivadese et al., 2017). The context analysis and interview findings agree with this inference from the literature. Figure 10 in the context analysis reveals that all the office conversions are within a 500-metre radius of an LRT station and several bus stops, providing optimal public transit access for residential development.

Similarly, Figure 11 shows that all the conversion projects would provide residents access to a public park within a 500-metre radius and that all are near several park pathways and recreational facilities. Surprisingly, Figure 12 reveals that while the project location provides significant access to public transit and recreational opportunities, the conversion location's proximity to various educational institutions is limited. However, Table 3 indicates that in all five census tracts, 10% or less of the population is comprised of individuals 14 years old or younger. This may reduce the importance of the conversions being close to education facilities, as most residents would not attend compulsory education. This could pose a challenge if the office to residential projects results in an influx of residents requiring close educational institutions. The cumulative findings from the context analysis provide evidence that the majority of the existing services and amenities in the surrounding urban environment have created a considerable opportunity for developers to construct a residential development in an area that supports and is appealing to residents.

The interview findings further support this argument. Five development professionals interviewed viewed the surrounding urban environment around the project site as advantageous due to its proximity to public transit. Development professional 6 suggested that having various public transit options near the site location made the building exceptionally

favourable for residential development. Development Professional 1 and 2 highlighted the opportunity to convert a building with close access to public transportation as an advantage for affordable housing conversions, as many residents lack private transportation. Additionally, over half of the interviewees identified access to public transit as a key factor when deciding where to undertake an office conversion project. Beyond public transit, both Development Professionals 4 and 5 connected the location's accessibility to active transportation infrastructure as being a prime opportunity for residential development. Development Professional 5 stated, “The site has great access to bike infrastructure which is becoming more sought after by residents making the location attractive”.

Unexpectedly, the data from the interview with the Public Sector Professional revealed that as most of the conversions have bypassed a development permit through the CCEA, the City’s mechanism to analyze development in the surrounding area has been removed. As such, the Professional explained that the primary focus when considering an office to residential project from the city perspective is the technical feasibility of the existing building rather than the context of the surrounding environment. This lack of consideration for the surrounding environment provides circumstantial evidence that the existing services and amenities can sufficiently support new residential development from the city's perspective. However, the lack of analysis of the surrounding environment by the City does present a potential risk regarding the urban environment's future capacity to support residents' needs. A sharp influx of new residents could place pressure on existing amenities and services such as educational facilities, healthcare facilities and grocery stores. Therefore, it would be advantageous for other cities to conduct a comprehensive analysis of the surrounding urban environment to ensure it can adequately support a future influx of residents.

6.6 Opportunity to Simultaneously Support Other City Initiatives

The existing literature on adaptive reuse projects frequently highlights that conversion projects allow developers to support environmental sustainability (Langston et al., 2008; Wilkinson & Remoy, 2017; Conejos et al., 2015; Tam & Hao, 2019). Langstone et al. (2008) suggested that this is achieved by conversion projects recycling of material which reduces

waste in landfills. Additionally, Mohamed et al. (2017) connected this to an opportunity to ensure that the embodied energy within the building structure is not wasted, while Carey & Wilkinson (2018) connected it to reducing emissions due to the short construction period. The findings generated from the interviews of development professionals revealed a similar trend, as four participants connected their office conversion project to a chance to support environmental sustainability. Corresponding with the existing literature, Development Professionals 3,5 and 6 connected their office conversions to an opportunity to reduce the number of materials going to the landfill from demolition. In addition, Development Professionals 3, 4 and 5 noted a window in which they could reduce greenhouse gas emissions during construction. At the same time, Development Professional 5 expanded on that idea to preserve the majority of the building's embodied carbon. The results of this data demonstrate that while none of the development professionals indicated environmental sustainability as a significant incentive for undertaking an office conversion project, the projects have inevitably provided the developers an opportune way to support environmental sustainability alongside their conversions.

The interviews also revealed that the office to residential conversion projects have allowed developers to support employment opportunities in Calgary. Development Professional 1 explained that the new residential developments are attracting activity to the area, which in turn supports surrounding businesses. Development Professional 4 linked the removal of vacant space to more property tax revenue for the City, while Development Professionals 1 and 2 connected it to employment opportunities generated by the project.

Interestingly, the Public Sector Professional highlighted that the City attempted to simplify the incentive program by not overcomplicating it with funding requirements for city initiatives such as affordable housing and climate mitigation. The Public Sector Professional argued that this approach was adopted as an attempt to reduce disincentives for developers. They further explained that municipal funding is very competitive, resulting in several of the developer’s submitting proposals supporting broader city goals without such requirements in place. Additionally, Development Professional 5 highlighted that by providing funding the City has some leverage to encourage developers to support specific policies and goals around

energy efficiency outcomes, climate change, and affordable housing where possible. The Development Professional explained that this was not a significant issue but did result in slightly less autonomy for developers. The cumulation of these findings suggests that while having specific funding requirements may have increased the City's leverage to use office to residential conversions as a strong mechanism to support other city goals, providing competitive municipal funding without specific requirements has enabled the City to promote initiatives without risking potential disincentives for developers. Ultimately, demonstrating that Developers and the City can concurrently support sustainability initiatives and the city's greater community by undertaking these projects.

6.7 Lack of Major Challenges

The examination of the existing literature for this project did not reveal any discussion identifying the challenges municipal governments face when supporting office to residential conversions. This study aimed to fill this gap during the participant interview with the Public Sector Professional. The Professional revealed that the City had encountered no significant challenges while facilitating the office to residential conversion projects in Calgary. Instead, the Professional linked potential challenges to administering the incentive program. The Professional noted that a potential challenge for the program is a continued funding commitment from the municipal government. They stated, "We have allocated almost all of our funds already, so the biggest challenge is finding more funding so we can keep supporting these projects". In addition, the Public Sector Professional explained that the City's lack of experience in constructing funding agreements was a minor challenge during the early stages of the incentive program. The Professional explained that as the funding program was an entirely new process for the City, the City was unaware of the risk to or potential concerns of developers. As a result, drafting agreements required lengthy negotiations with developers.

While these findings highlight issues related to the incentive program, the Public Sector Professional's inability to identify any challenges connected to the City's involvement in the office conversion projects suggests that the approach and strategies used by the City of Calgary have been extremely successful in advancing these developments. The results from the

development professional interviews reinforced this finding, as none of the professionals identified the city's policy or processes as a significant barrier or challenge to the projects. As such, the lack of significant challenges for the developers and the municipal government suggests that the approach and tools used by the City of Calgary should be examined by other municipalities considering engaging in office to residential conversions.

7.0 Conclusion

This chapter aims to conclude this research by connecting key concepts explored in previous sections and providing final remarks. I begin by addressing the capstone project's research questions. In subsequent sections, I identify areas for further research and provide my final thoughts.

7.1 Addressing the Research Questions

1.) *What strategies has the municipal government in Calgary used to advance the repurposing of vacant office space into housing?*

To help advance and support office to residential conversions in Calgary, the municipal government has used various strategies. However, the most significant strategy identified by all the interviewees was the specific funding opportunities the City of Calgary created to support office to residential conversion downtown. Most notably, the "Downtown Calgary Development Incentive Program'' was identified as an extremely effective strategy that stimulated developer interest and feasibility for office conversion.

The municipal government also used a flexible/negotiable policy approach for the office to residential conversion projects. This was identified as an effective strategy by development professionals due to its ability to reduce various challenges and disincentives when converting an existing building that does not meet current planning or building codes. Additionally, this strategy was advantageous for the City as it ensured that the office to residential conversion projects continued to advance and subsequently worked towards eliminating the vacant office. The City also created a dedicated team of professionals to support the office to residential

conversions. This strategy was created to provide consistency among the projects and to enhance support for developers undertaking office conversion. Assembling a dedicated support team proved effective, as most of the development professionals interviewed connected it with providing a significant time advantage.

Lastly, the municipal government developed and refined initiatives for office to residential conversions in full partnership, collaboration, and consultation with industry members across Calgary. This strategy proved beneficial, enabling the City to learn from those familiar with development and conversion projects. This ensured the City was well informed on office to residential conversion processes and challenges. In addition, it provided insight into the strategies the City should adopt from a developer's perspective, which ultimately contributed to the success of office to residential conversions in Calgary's downtown.

2.) *What considerations and challenges has the municipal government faced when advancing the conversion of vacant office space into housing?*

This question was answered through the semi-structured interviews. The City's primary consideration when advancing the office to residential conversion projects is the technical feasibility of converting the existing building. Other considerations by the City are highly dependent on the regulatory context in which the project is situated. This is because many office to residential conversion projects are exempt from a development permit due to the CCEA program. As a result, the City's mechanism to consider the influence of the development on the urban and social features in the surrounding area for most office conversion projects has been removed. This may pose a potential risk around the urban environment's future capacity to support residents' needs.

The findings revealed that the municipal government had experienced no significant challenges when advancing the office to residential conversion projects. Instead, the most significant challenge facing office to residential conversions moving forward is continued municipal funding support for the projects.

3.) *What opportunities and challenges have developers in Calgary encountered when converting vacant office space into housing?*

Developers in Calgary have encountered several opportunities when undertaking office to residential conversion projects. The semi-structured interviews revealed various ways the municipal government has created favourable opportunities for developers. Some were various municipal funding programs, accommodating policy and enhanced support strategies that provided developers with an advantageous opportunity to undertake a residential conversion project.

The context analysis and semi-structured interviews also revealed that the existing real-estate market and urban environment in Calgary's downtown have created a uniquely favourable context for converting office space to residential use. The current office space market has enabled developers to purchase buildings at a cost-effective price and convert them into residential use in an area with low supply and high demand. Furthermore, the abundance of existing services and amenities within the surrounding downtown urban environment situates the conversion projects in a location appealing for residential development.

Additionally, the findings revealed that undertaking an office to residential conversion has allowed developers to support initiatives beyond reducing vacant office space. This includes sustainability initiatives through the reuse of building materials and support for the city through revitalizing the downtown and creating more economic opportunities.

The semi-structured interviews revealed that the primary challenges encountered by developers were technical rather than policy related. Several development professionals identified challenges with the existing building systems, building envelope, layout, and floor plates. None of the professionals identified the city's policy regulations as a significant challenge. Most professionals commended the city for creating a regulatory context conducive to and supporting office to residential conversion projects.

4.) What lessons does the Calgary example offer other cities aiming to increase their housing stock through office space conversion?

Key lessons include:

- Municipal funding support is an effective strategy to incentivize and support developers to undertake office to residential conversions,
- A flexible planning and building policy approach by the municipal government dramatically increases the technical feasible of office conversions from a developer's perspective.
- When supporting office to residential conversions, municipal governments should establish a dedicated conversion team that actively collaborates with industry members. This ensures that the municipality is consistent and well informed on the processes, challenges, and requirements of the development when undertaking office conversions.
- Office to residential conversion projects provide a unique opportunity for municipal governments and developers to support city-wide initiatives such as sustainability, employment, and tax revenues while simultaneously removing office vacant space.
- The outcomes for office to residential conversions are highly dependent on contextual factors. This includes favourable market conditions to acquire an office building and high residential demand make the project profitable once complete.
- The urban context and services in which a prospective office to residential project is located should be analyzed to ensure it can accommodate new residential development.

7.2 Directions for Future Research

At the time of this research majority of the office to residential conversion projects are still in the early stages of development. Therefore, researching the outcomes of these projects after completion would provide a more comprehensive understanding of the considerations, opportunities and challenges encountered by both the municipal government and developers when undertaking office to residential conversions. In addition, further research following the completion of these projects may also provide additional lessons for future projects.

Multiple topics discussed in the interviews could be further analyzed in future research. For example, the Public Sector Professional identified the City of Calgary's intention to convert

vacant office space into uses beyond residential. This includes office space conversion to hotels, educational uses and neighbourhood amenities. It would be valuable to explore the strategies, opportunities, considerations, and challenges arising from these projects compared to the office to residential conversions. Such a comparison would enable a more comprehensive understanding of how adaptive reuse projects can be used to reduce vacant office space.

7.3 Final Thoughts

While much remains to be seen about the future of the physical workplace and demands for office space in cities, my research has highlighted specific strategies, challenges, considerations, and opportunities that arise when converting office space to residential use. While not every municipality will face the same office vacancy crisis seen in Calgary, the approaches, and outcomes of Calgary's office to residential projects should be considered by all cities**,** as high office vacancy can have negative societal and economic implications for the urban environment.

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Appendix A: Semi-Structured Interview Questions:

Public Sector Professional Interview Questions

1.) Introduction

1.1. Can you describe your current role with [Agency X]?

1.2. How long have you been involved in the planning or public policy sector?

1.3. What was your role in supporting office to residential conversions in Calgary?

2.) Role of the government

2.2 Can you describe any policy-oriented strategies used by the municipal government to promote office to residential conversions in Calgary?

2.3 Can you describe any financial programs created by the municipal government to incentivize the development of residential conversion projects in Calgary?

2.4 Are/were there any other strategies not previously mentioned that the municipal government used to promote or incentivize the development of office to residential conversions in Calgary?

3.) Project Considerations/ Challenges

3.1 What site characteristics does the municipal government consider when approving the conversion of office to residential sites? (eg. Infrastructure, transportation, and essential services access).

3.2 Did the municipal government assess "building class" (eg. Class A, B, C) when promoting conversion projects?

3.2.1 If yes, was there a preferred building class and why?

3.2 Did the municipal government consider the environmental impact of adaptive reuse projects?

3.2.1 If yes, what environmental considerations were evaluated?

3.3 Did the municipal government do any public engagement about the office conversion projects?

3.3.1 If yes, can you describe the process?

3.3.2 Who was targeted in that engagement?

3.4 What do you predict the impact of the projects will be on the surrounding area?

3.5 At any point in the process did the municipal government encounter any challenges/barriers? (eg. Infrastructure, financially, socially, politically)

3.6 In your opinion, what is the most challenging part of undertaking office to residential conversions?

3.7 In your opinion, what are the benefits of undertaking office to residential conversions?

3.8 In your opinion, what are the drawbacks associated with undertaking office to residential conversions?

4.) Reflecting on the Process

4.1 What recommendations would you give other municipalities considering office to residential conversions?

4.2 How do you see the future of office conversions in Calgary?

4.3 Is there anything else you would like to add about the process before we finish?

Development Professional Interview Questions

1.) Introduction

1.1. Can you describe your current role with [Agency X]?

1.2. How long have you been involved in the development industry?

1.3. What was your role in developing [Project X]?

2.) Opportunity for Development

2.1 Was there a specific criterion used to select a project location?

2.1.1 If yes, what features were considered and how were they weighted?

2.2 Were there site-level characteristics that made the project site compelling to undertake an office to residential conversion project? (eg. existing infrastructure, location, building class).

2.3 In your opinion, are there advantages to office to residential conversion projects have in comparison to new residential construction? Are there disadvantages?

2.4 In your opinion, what are the drawbacks associated with undertaking office to residential conversions?

2.5 Did you encounter challenges during the project? Can you describe them? (eg. infrastructure, financially, socially, politically).

2.6 In your opinion, what is the most challenging part of undertaking office to residential conversions?

2.7 In your opinion, are there market indicators and circumstances that have made office space to residential conversion projects particularly feasible in Calgary?

Probe - (eg. interest rates, municipal policy, housing supply, vacancy percentages).

2.8 Did your project receive any financial support from the municipal government or other levels of government that incentivized you to undertake a residential conversion project in Calgary?

2.8.1 If yes, can you disclose what government funding program supported your project?

2.8.2 Were the government funding programs important for your decision to undertake the project?

2.9 Were there any policies from the municipal government or other levels of government that supported you to undertake a residential conversion project in Calgary?

3.0 Were there any policies from the municipal government or other levels of government that hindered you from undertaking a residential conversion project in Calgary?

3.) Reflecting on the Process

3.1 How do you see the future of office conversions in Calgary?

3.2 What recommendations would you give other developers facilitating vacant office space to residential conversions?

3.3 Is there anything else you would like to add about the process or lessons learned before we finish?

Affordable Housing Development Professional Additional Questions

1.1 During the undertaking of the conversion did you encounter any challenges specific to the affordable housing aspect of the project (eg. financially, socially, politically)?

1.2 In your opinion, what are the most challenging parts of undertaking an office to affordable housing conversion?

1.3 Did your project receive any financial support from any levels of government that was specific to the creation of affordable housing units?

1.4 In your opinion, what are the advantages of converting vacant office space to affordable housing?

1.5 In your opinion, what are the disadvantages of converting vacant office space to affordable housing?

1.6 How do you see the future of office to affordable housing conversions in Calgary?

Appendix B: Shapefile Sources

Shapefiles for the Context Analysis came from the following sources

Figure 8

City of Calgary. (2023a). Current Year Property Assessments (Parcel) Dataset. *City of Calgary .* https://data.calgary.ca/Government/Current-Year-Property-Assessments-Parcel-/4bsw-nn7w

Figure 9

City of Calgary. (2023b). Calgary Transit Routes Dataset. *City of Calgary*. https://data.calgary.ca/Transportation-Transit/Calgary-Transit-Routes/hpnd-riq4

City of Calgary. (2023c). Transit LRT Stations Dataset. *City of Calgary.* https://data.calgary.ca/Transportation-Transit/Transit-LRT-Stations/2axz-xm4q

City of Calgary. (2023d). Calgary Transit Stops Dataset. *City of Calgary*. https://data.calgary.ca/Transportation-Transit/Calgary-Transit-Stops/muzh-c9qc

Figure 10

City of Calgary. (2023c). Transit LRT Stations Dataset. *City of Calgary.* https://data.calgary.ca/Transportation-Transit/Transit-LRT-Stations/2axz-xm4q

City of Calgary. (2023d). Calgary Transit Stops Dataset. *City of Calgary*. https://data.calgary.ca/Transportation-Transit/Calgary-Transit-Stops/muzh-c9qc

Figure 11

City of Calgary. (2023e). Recreation Facilities Data Set. *City of Calgary.* https://data.calgary.ca/Recreation-and-Culture/Recreation-Facilities/hxfu-6d96

City of Calgary. (2023f). Park Pathways Dataset. *City of Calgary.* https://data.calgary.ca/Recreation-and-Culture/Parks-Pathways/qndb-27qm

City of Calgary. (2023g). Park Sites Dataset. *City of Calgary.* https://data.calgary.ca/Recreation-and-Culture/Parks-Sites/kami-qbfh

Figure 12

City of Calgary. (2023h). School Locations Dataset. City of Calgary. https://data.calgary.ca/Services-and-Amenities/School-Locations/fd9t-tdn2

Appendix C: Research Information Sheet

Research Information Sheet

INFO SHEET

CITY 7050 CITY PLANNING CAPSTONE PROJECT
Department of City Planning, Faculty of Architecture
(Course Instructor: Dr. Orly Linovski)

Name of Student: Hayden Keogh

Title of Project: The Revival of Unused Office Space: Examining the Conversion of Vacant Office Space to Housing in Calgary's Downtown.

Summary of Project: This research will examine Calgary's recent vacant office space to residential conversion projects. It will focus on identifying and analyzing key strategies, considerations, and challenges of the municipal government when promoting and regulating office to residential conversions. The research will also focus on identifying and examining what opportunities and challenges private developers in Calgary faced when undertaking an office to residential conversion. The findings of this study will provide a comprehensive understanding of office to residential conversions in a Canadian context and will provide key lessons for other municipalities assessing office to residential conversions.

Description of Course Assignment

City Planning graduate students must complete a Capstone Project as part of their Master's degree. The goal of the project is for students to conduct in-depth research on an issue of importance for planning practice. The students' information-gathering projects will be presented in class and will form the basis for a written report at the end of term.

The projects are undertaken under the supervision of the Course Instructor, Dr. Orly Linovski (see contact information below), in accordance with the protocols of the Human Ethics Secretariat of the University of Manitoba for research involving human subjects. This research has been approved by the Research Ethics Board at the University of Manitoba, Fort Garry campus.

Specific Activities to be Completed by Project Participant and Time Frame: Project participants will be interviewed by the researcher. All participants must be over the age of 18 and have been involved with an office to residential conversion project in Calgary. They will be given the opportunity to respond to 8-10 questions about their experience in supporting an office to

residential conversion project. Interviewees may be asked follow-up questions based on the answers they provide. Participants will be provided with a list of semi-structured interview questions 5 days before the scheduled interview to help orient them to line of questioning. Interviews will last no longer than one hour and will be conducted via a licensed version of the video-conferencing software Zoom. With permission, activities, interviews, or other kinds of sessions may be video and audio-recorded and transcribed at a later date, so that analysing the material will be completed with greater ease and efficiency.
CONTACT INFORMATION:

Student Name: Hayden Keogh

Student's University Contact Information: keoghh@myumanitoba.ca

Course Instructor: Dr. Orly Linovski, Associate Professor
Department of City Planning, University of Manitoba
Telephone: 204-474-6424 e-mail: orly.linovski@umanitoba.ca

Appendix D: Consent Form

Consent Form

CITY 7050 CITY PLANNING CAPSTONE PROJECT
Department of City Planning, Faculty of Architecture
(Course Instructor: Dr. Orly Linovski)

This Consent Form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Name of Student: Hayden Keogh

Title of Project: The Revival of Unused Office Space: Examining the Conversion of Vacant Office to Housing in Calgary's Downtown.

CONTACT INFORMATION:

Student Name: Hayden Keogh

Student's University Contact Information: keoghh@myumanitoba.ca

Course Instructor: Dr. Orly Linovski, Associate Professor
Department of City Planning, University of Manitoba
Telephone: 204-474-6242 e-mail: orly.linovski@umanitoba.ca

Specific Activities to be Completed by Project Participant and Time Frame: Project participants will be interviewed by the researcher. They will be given the opportunity to respond 8-10 questions and sub questions regarding their personal and/or professional views on the vacant office space to residential conversion projects in Calgary. Interviews will last no longer than one hour and will be conducted via a licensed version of the video conferencing software Zoom.

Description of Course Assignment
City Planning graduate students must complete a Capstone Project as part of their Master's degree. The goal of the project is for students to conduct in-depth research on an issue of importance for planning practice. The students' information-gathering projects will be presented in class and will form the basis for a written report at the end of term. In this case,

my objective is to examine Calgary's vacant office space to residential conversion projects to identify what lessons can be drawn from this example, and applied by other cities interested in undertaking similar office to residential conversions.

The projects are undertaken under the supervision of the Course Instructor, Dr. Orly Linovski (see contact information below), in accordance with the protocols of the Human Ethics Research Board of the University of Manitoba for research involving human subjects. This research has been approved by the Research Ethics Board at the University of Manitoba, Fort Garry campus. A copy of this Consent Form has also been reviewed and approved. Consent Forms listing Project Title and the specific activities to be completed by participants will be submitted to the Instructor and kept on file for information purposes only for two years (or until the next City Planning program accreditation), in accordance with University ethics policies.

Benefits
Direct benefits may include the opportunity for participants to share their perspective on a planning issue or challenge. Indirect benefits are that the final Capstone Projects will contribute to planning knowledge and may result in new strategies or policy directions to address planning issues and challenges. Students will also benefit by learning about conducting ethical research.

Risks
The risk of participating in interviews is no greater than risks encountered in everyday life. One potential risk is a professional risk. To minimize this risk, the following procedures will be undertaken.

Confidentiality
The data collected through this research is confidential. This means that participants' names or any other personal information will not be included in presentations or reports arising from the study. Unless explicitly permitted, all names and other identifying details will be anonymized. Direct quotes may be published within the project report. Participants will be referred to by their job sector (city employee/development industry employee) and number (1,2,3, etc.) During the interview, interviewees can skip or decline any questions. Audio recordings, transcripts, and names of interviewees will be kept in separate encrypted files on a password-protected computer.

Audio and Video Recording
With your permission, the Zoom interview will be recorded using built-in feature present in the Zoom video-conferencing software which automatically captures both audio and video (with video as a separate file). If you do not wish to have your video captured, you will be given the option to turn off your camera before the interview begins. Following the completion of the interview, the separate video recording file will be destroyed. The Primary Investigator will transcribe the audio recording data, with the assistance of AI transcribing software which is integrated into Zoom. The audio recording will be retained with all other data until the date of destruction as indicated in this consent form. If you choose not to be recorded, handwritten notes will be taken and then destroyed by the PI after they have been summarized by the Primary Investigator.

The participant may also request at any time to end the interview. This will result in the Primary Investigator immediately stopping the recording and any note taking. Any interview data will subsequently be destroyed.

Feedback

The results from this project, including anonymized details, may be used for conference presentations and/or publication in journals and other academic and professional resources. Students' completed Capstone Projects will be publicly available through the University of Manitoba's website (https://umanitoba.ca/architecture/ department-city-planning).

Use of Data, Secure Storage and Destruction of Research Data

All information will be treated as confidential and securely stored in encrypted files and on the University of Manitoba-provided Individual File Storage system OneDrive under the researcher's personal University account, and subsequently destroyed at the end of the course (by the end of May 2023).

Copies of consent forms will be securely kept on file by the Course Instructor for information purposes only for two years and then destroyed, in accordance with University ethics policies. If consent is obtained verbally, transcriptions will be produced and stored in the same manner.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at anytime, request that any data provided be omitted from the study (prior to February 28, 2023), refrain from answering any questions you prefer to omit, or request to stop the audio-video recording at any time, without prejudice or consequence. If you would like to withdraw, you must notify the researcher or the course instructor (below) by email prior to February 28, 2023. If you choose to withdraw, all files related to your participation will be destroyed. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Research Ethics Board at the University of Manitoba, Fort Garry campus. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator at humanethics@umanitoba.ca; or 204-474-7122. A copy of this Consent Form has been given to you to keep for your records and reference.

Thank you for participating in this project. Your cooperation and insights are very valuable, and are greatly appreciated!

I, _____, consent to the dissemination of material

[Name of Participant: please print]
provided to the student for use in their Capstone Project and in course materials. I understand that the information I provide will be incorporated in a presentation and report. I understand also that all research data will be treated as confidential, stored in a private and secure place, and subsequently destroyed at the end of the course by the student.

I agree to be audio-video recorded. Please note that if "No" is selected, handwritten notes will be taken by the interviewer.

Yes ☐ No ☐

I give permission for the results of this project, including anonymized details, to be used for conference presentations and/or publication in journals and other academic and professional resources

Yes ☐ No ☐

I would like to receive a summary of the results from this project (available **April 2023)**. If yes, please provide your email address or mailing address below.

Yes ☐ No ☐

I would like to receive a copy of the final report (available **June 2023**). If yes, please provide your email address or mailing address below.

Yes ☐ No ☐

_____ _____

Signature of Participant Date

_____ _____

Mailing Address E-mail

Participant's contact information (in order to receive a summary of the results from this project):