

Riders, Not Drivers of Change:
how parking regulations can shape a city's future.

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A Major Portfolio

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Abstract

Many major cities around the world today have been designed for cars and not for people. In Canada and the US, most built infrastructure is devoted solely to cars – roads, highways and parking, and has even led us to conceptualize the city as a car-based space. Cars do serve a role in our lives, and for some, are essential in meeting everyday needs. Designing our living spaces excessively around them, however, has resulted not just in substantial societal costs and adversity, but has also altered our perception of living spaces themselves. Continuing to devote these spaces to car infrastructure perpetuates our dependence on cars. Building parking spaces in particular, uses substantial land and resources while failing to offer viable societal returns on costs.

Realizing the costs and consequences of building excess parking in Toronto, the city municipal body has recently revised its parking requirements policy, abolishing parking minimum requirements, and replacing them with parking maximums. This amendment is driven by the city's vision for a more liveable, sustainable, transit-oriented city, that is less dependent on cars, as stated in its official plan. This research study, in the form of a Major Portfolio, explores in depth the reasons behind the implementation of this policy revision, and its implications for residents and commuters, as well as what it means for the identity of the city itself. The study investigates these questions through the perspectives and responses of stakeholders, experts, developers and planners, and the community, which are collected through interviews, and adopts a behavioral lens in its analyses of the issue.

My research indicates that Toronto's parking policy revision is a step in the right direction, but a small step, and one that is unlikely to lower housing costs to home buyers/renters. It can help developers and other stakeholders through cost savings due to less money spent on constructing unnecessary parking stalls, and it will help reduce the proportion of unused parking spaces for the future. However, it needs to be complimented with more radical changes in order to reduce car dependence, to encourage people to shift to healthier and more sustainable methods of transportation, and make housing more accessible to people.

Foreword

This Major Portfolio is not a conclusion – it is part of a beginning. A beginning of a creative and explorative adventure that came to life the day I joined the Master of Environmental Studies program at the aptly named Faculty of Environmental and Urban Change. Today, after 2 rigorous years of practical exploration and academic inquiry - an amazing journey of self-growth - I can say with utmost happiness and delight that I haven't yet reached a final destination, but I have completed the MES stretch of it. The paper you hold in front of you is part of the fruits of this labor, and it completes my MES degree, but it doesn't conclude my larger journey of exploration.

I framed my MES Plan of Study around my desire to study urban planning with a focus on leveraging behavioral insights in planning, and developing an understanding of how the design of our cities and living spaces shapes our culture and preferences. I also wanted to improve my ability to collect, use and analyze planning related data, and visualize and communicate it in an effective manner. Another ambition and goal of mine was to learn how to frame planning ideas in a Canadian context, and to be able to practically apply them in planning in Canada. The courses that I took at EUC, the practical experience that I've accumulated in these two years, and the Major Portfolio that I've produced in conclusion of the MES program, are reflective of my approach and plan, and fulfill the requirements of my MES degree.

My Major Portfolio spans learnings and ideas across all dimensions and components of my area of concentration as defined in my MES Plan of Study. This project is grounded in a recent planning bylaw amendment in the city of Toronto which is also relevant for the rest of the country, as well the larger region. I build several infographics and communicate data through a variety of different mediums, including text, chart, infographics, and even video. And finally, I explore the insights and learnings that I've gathered from primary and secondary research using a behavioral lens, being cognizant of the present-day as well as historical cultural ramifications of policies in a Torontonion and regional context. My Portfolio in this way contributes to fulfilling the requirements of my MES degree.

Acknowledgements

I'd like to acknowledge Luisa Sotomayor for being an amazing supervisor and for supporting me in my decisions. I'm also grateful to the Faculty of Environmental and Urban Change for the many opportunities they gave me: accepting me into this program as an international student, funding me, providing me with accommodations upon my arrival in Canada due to the pandemic, giving me access to a campus full of facilities and opportunities, allowing me to enroll in courses as diverse as Geographic Information Systems, Ecological Footprint Analytics and Land Use Planning Law, and offering me the platform to design and produce a Major Portfolio that combines my passion for sustainable urban planning with my craving for creative artistic expression. I cherish every moment spent in this program and all the time I had with the faculty, staff, and peers that I was with, despite the challenges that the pandemic brought, and I hope to stay connected in times to come. Finally, I'd like to thank Flora Gomez for resurrecting, supporting, encouraging and bringing to life the artist in me.

Thank you,

Ahmed

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Introduction, background and context

Zoning and land use laws are important because they truly shape the spaces that we spend our lives in. And of all these land use laws, the ones related to cars and parking have substantially altered the way we live and the environment that we see and interact with around us. I grew up in a car-dependent city – Karachi, Pakistan, where car traffic, vehicular pollution, and lack of alternative commuting options defined my urban experience. My work-home commute at my first job was about 20 km, but it would take me hours to drive through a sea of angry cars and motorbikes in rush hour. If I didn't leave my place of work at 5 PM on the dot, every minute delayed would result in exponentially rising commute time due to increasing vehicle traffic. My experience commuting in Karachi left with me a lasting aversion to car traffic, as well as a sensitivity to and awareness of the societal costs of a car-dependent city, and the equity issues surrounding this more individualistic and costly method of transportation.

I also grew up hating the 'city'. Because to me, and I imagine to everyone who grows up in similar settings, this is what the city is: a place exclusively for cars, concrete, and asphalt. The term 'city' to me does not conjure up images of walkable pathways and cycling lanes, open skies interspersed with greenery and trees, or of liveable neighborhoods bustling with people instead of cars. Even here in Toronto – where there are actual pedestrian paths and bike lanes – cars and concrete still dominate the landscape. And speaking of both, concrete, and dominating the landscape, it was upon arriving in Toronto that I was introduced to the by-product of auto-centric urban development: large parking lots. I learned quickly that parking (generally) in North America takes up huge swathes of land, such as outside retail, big-box grocery stores and strip-malls. Of course, these are only the tip of the iceberg. Underground parking garages, especially for high density residential projects, are even larger (and span beyond one level/floor), extracting substantial resources from the planet in their development, along with imposing enormous costs on those who build them, and then onto those who buy (or are forced to buy) them, as well as on society as a whole – something that I learned from the interviews I conducted for this research project, as well as from review of existing literature (McDonnell, Madar, & Been, 2011); (Shoup, *The High Cost of Free Parking*, 1997); (Shoup, *The High Cost of Free Parking: Updated Edition*, 2011).

It seems difficult at this point to move beyond auto-centric infrastructure and transform car-dependent spaces in North America into liveable, walkable, cyclable communities, cities, and social transit hubs in the near future. Cars have their benefits and play an important role in our lives, especially for those living in, or commuting to areas lacking adequate public transit access, and for those who need the accessibility features cars can provide. This is true for Toronto, even though the city's public transit options are improving city-wide, including the growth of light rail rapid transit systems. The growth of cycling infrastructure, public bike share, and better pedestrian accessibility also means that active transport is becoming a more viable and practical option. Some aspects of car-centric infrastructure, and the disproportionate space in our cities and role in our lives that they currently occupy, can be rectified.

The core idea that I wish to illuminate, investigate and present through this portfolio relates to our conceptualization of the 'city', and what land use laws such as parking requirements mean for this conceptualization. The city does not have to be this concrete and asphalt landscape with more vacant lots for parking than there are homes for people, that we have come to perceive it as. It doesn't have to be synonymous with car traffic and pollution and a lack of greenery and openness. Cars may be needed in Toronto and the surrounding region to an extent today by some people, but our idea of a city and of the places we live in and move around in shouldn't be dependent on the car and on the infrastructure that comes with it.

Comprehensive research currently already exists on parking demand and supply, both in a local (Toronto) (Engel-Yan, Hollingworth, & Anderson, 2007) as well as a global context (Li & Guo, 2014); (Kimpton, et al., 2020); (Smith A. , 2013). The idea of revising parking requirements, and its potential costs and benefits, has also been studied before (Gabbe, Pierce, & Clowers, 2020); (Manville, 2014), as well as highlighted in the media (Davis, 2021); (Fraser Institute, 2018); (Polidoro & White, 2022), and there have been several reports published in recent years that have encouraged removing parking minimums in Toronto, offering detailed analysis on the issue (RCCAO & Ryerson Urban Analytics Institute, 2019). My investigation builds on the ideas presented by these reports and research, uniquely adding to, as well as advancing the discourse by studying the voices and perspectives of relevant stakeholders through a portfolio that combines video and written components, with a thematic focus on the cultural and behavioural aspects of the issue.

Research questions, methodology and limitations

Several North American cities and municipalities are changing their laws around parking requirements for new developments – specifically removing minimum parking requirements and placing maximums instead (Parking Reform Network & Strong Towns, 2022). Toronto amended its zoning bylaw in December 2021, removing parking minimums and adding maximums instead (Toronto City Planning Division, 2021), and the implications of this policy change are at the core of my research study. The questions that I am investigating in my study are: What are the full costs/externalities of vehicle parking? Who benefits from removing parking minimum requirements (and replacing them with maximums)? Can this change help reduce housing costs in a city in which owning or renting homes has become impossibly expensive? Will there be other impacts of such a policy change, especially adverse/equity impacts in different areas of the city, given that not everyone has equal access to public and active transit options? Are parking spaces that have already been built, being fully utilized, and if not, what can we do with those unused spaces? I am also interested in identifying and exploring what the future holds for Toronto in terms of cars, parking and the city's aspirations and vision of becoming a more walkable and less car-dependent city.

I appreciate the value in stronger communication between planners, academics, politicians, and the public, and understand that video as a medium of communication reaches a large target audience today. For this reason, my portfolio consists of two components – a video piece, and a written piece. Both pieces tackle the subject matter holistically, but one (the video) focuses more on why removing minimum parking requirements from cities (and placing maximums instead) is an idea worth pursuing today, framing this question in the historical context of the growth of car-centric lifestyles and infrastructure, and the other (the written piece) focuses more on the potential impacts of such a decision, especially through a behavioral lens, and based on feedback and perspectives collected from relevant stakeholders and city residents. Both pieces have a modern-day, local (Toronto) focus, but are grounded in, and delve into their connection with the global and historical context.

In attempting to answer my research questions, I conducted both secondary as well as primary research. I analyzed academic journal articles, scholarly books, policy documents, zoning bylaw revisions, news and media articles, as well as other pertinent documents and information

from websites and archives belonging to groups relevant to this issue, for example the Residential Construction Council of Ontario (RESCON). I also conducted a total of 11 virtual interviews with people/organizations who are relevant to the issue. These included senior-level planners and managers from the City of Toronto and Metrolinx, senior-level executives from private real estate development agencies, construction agencies and RESCON, as well as city residents. Figure 1 is a list of interviewees with their names, positions and organizations.

No.	Name	Organization	Position/status
1	Orli Shwartz	Lanterra Developments Ltd.	Director, Development Approvals
2	Michael Hain	City of Toronto, City Planning Division Transportation Planning, Policy and Analysis	Program Manager
3	Elsa Fancello	Castlepoint Numa	Vice President, Planning & Development
4	Marcus Gillam	Gillam Group Inc.	Chief Executive Officer
5	Patrycja Jankowski	Metrolinx	Senior Advisor
6	Margherita Cosentino	City of Toronto, Transit Implementation Unit	Senior Planner
7	Paul De Berardis	Residential Construction Council of Ontario (RESCON)	Director of building science and innovation
8	Anonymous	Anonymous	Director, Transportation and Master Planning
9	Anonymous	A national engineering and environmental consulting company	Vice President
10	Anonymous	-	Toronto resident
11	Anonymous	-	Toronto resident

Figure 1 – List of interviewees and their positions and organizations

The rest of the portfolio is structured as follows: first, I address the question of why we should care about car dependence and how it relates to the conceptualization of the city today. I then discuss the adverse effects of having excessive parking in our urban planning and design. Keeping these discussions in mind, I then shed light on Toronto's recent amendment to bylaw 569-2013, which relates to the change in parking regulations that I am studying, also going over the public perception and media coverage and response to the policy revision. Finally, I discuss insights and learnings from the interviews I conducted and then share key takeaways and policy recommendations.

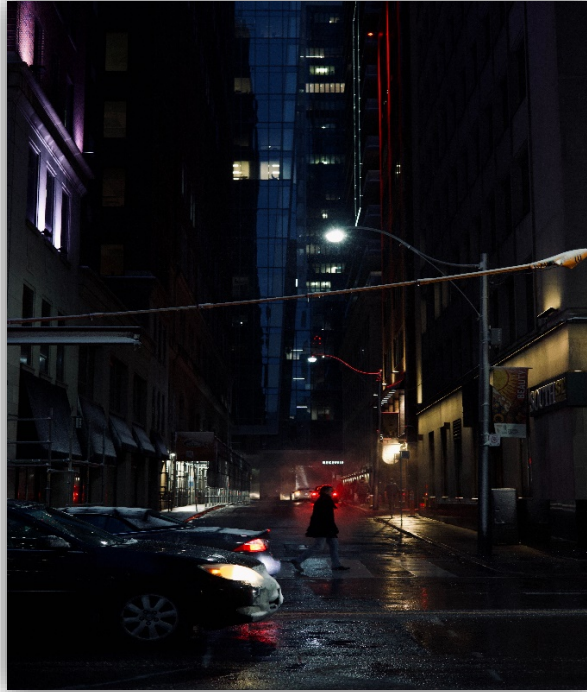
The biggest limitation for this project was the lack of pre-compiled/consolidated publicly available data relevant to the issue. Stakeholders I interviewed, for example, Paul De Berardis, Director of building science and innovation at the Residential Construction Council of Ontario (RESCON), shared with me that a lack of data in the region with regards to the sale and supply of parking lots (or for the demand for parking lots) prevents stakeholders from gaining clarity on parking supply and demand. It is crucial that this information is captured and recorded in a centralized database, such as that of StatsCan, especially to study more rigorously the impacts of a policy decision that is targeting to alter the supply of parking.

Riders, not Drivers of Change: The video

The video component of this portfolio, ‘Riders, not Drivers of Change’, has a large file size due to high video quality and therefore cannot be submitted on the EUC online Dossier system (due to the Dossier’s upload file size restrictions). Please download the video through this link to watch it: [Rider, Not Drivers of Change - Ahmed_Full_Video.mp4](#)

Chapter I - North America and parking: A love affair

Who should we design our living spaces for – people or cars? Why should we care?



Parking minimum requirements enforce developers to provide a set number of parking stalls (that conform to certain standards) per ‘unit’, where a ‘unit’ varies widely across development types, jurisdictions and building purposes. For example, the requirement for a residential condo building could be 0.5 parking stalls per bedroom, that is, one parking stall must be constructed for every two bedrooms built. Parking maximums, on the other hand, place an upper limit on the number of parking spaces a developer can build per unit.

While the regulation of traffic and parking on streets has existed since the 1800’s, off-street parking requirements for the automobile first appeared in North America at the beginning of the 20th century, with the rise of the motorcar and the ideas, implications and industries that came with it (Segrave, *Banning Begins*, 2012). The first *minimum* parking requirement specifically was established in 1923 in Columbus, Ohio, USA (Nichols, 2019). Today, however, especially in cities where strong public transportation infrastructure such as subways, busses and light rail rapid transit systems exist, and active transportation such as cycling and walking is making a resurgence,

minimum parking requirements have been increasingly falling under public scrutiny (Engel-Yan & Passmore, 2010), and their existence and usefulness is being questioned by urban planners, politicians and members of the public alike, often resulting in bylaw revisions such as the one that I am investigating through this portfolio (Nichols, 2019); (Kimpton, et al., 2020). Several major North American cities have already fully or partially eliminated minimum parking requirements from their bylaws and have placed maximums instead (Shoup, 2011); (Strong Towns, 2019).

Car-focused infrastructure and urban design – an omnipresent theme in North American planning that emerged during the post second-world-war period (Young, 2015) and exists to this day – has dictated how the built environment was conceptualized and constructed in the region. This means that not just ‘suburbia’, but also metropolitan cities in North America, despite providing some access to public transit, have been built and designed mainly around the car (Filion & Pulver, 2019). The environment where people live, work and spend their lives in, shapes their behavior, habits and lifestyles. The impact of infrastructure on peoples’ lives isn’t just limited to its practical utility. It also has a psychological effect and long-term behavioral impact on people, and it shapes their lifestyles, desires, cultures, preferences, social engagements and interactions (Mahmoud, 2018). Especially when that infrastructure is part of their daily commute and homes.

Today, city and suburb residents have embraced the car as an important part of their lives, and everything that comes with the car, including expensive roads, highways, expressways, traffic and street congestion, noise and air pollution, climate change, unhealthy lifestyles devoid of active mobility, fatal accidents, expensive insurance and maintenance, non-pedestrian-friendly and unaesthetic car infrastructure such as six-lane motorways, inefficiently designed suburbs, and parking, among other things. According to Our World in Data, and based on IEA data, “road transport accounts for 15% of total (global, man-made) CO2 emissions. Most of this comes from passenger vehicles...which contribute 45.1% (of total road emissions)” (Ritchie, 2021). A car-focused lifestyle also leads to other detrimental impacts on society. Quitting walking, cycling and other forms of active transport in favor of automobiles has a negative impact on physical and mental health (Langlois, Wasfi, Ross, & El-Geneidy, 2016), and a car-focused city is also less social and less lively, as compared to one with pedestrians and cyclists on ‘walkable’. (H. Yassin, 2019).

And while highways and roads appear as the more visible elements of auto-centric planning, and are part of the daily journeys of work commuters, parking is that and more: it is also a part of our homes. Parking, it seems, for North Americans, is just as important as a bedroom, bathroom or kitchen. It is so important, that North American cities have, since the early twentieth century, been mandating developers to adhere to minimum parking space requirements for new developments. The City of Toronto is no different, and a 2019 report published by the Residential and Civil Construction Alliance of Ontario (RCCAO) and the Ryerson Urban Analytics Institute reported that Toronto's parking requirements had not been 'meaningfully updated' since 1986 (RCCAO & Ryerson Urban Analytics Institute, 2019). That has now changed with the amendment of bylaw 569-2013 in December 2021, but it'll be a long time before the face and form of Toronto starts to see real change.

The presence of excessive and (in some cases) unused parking spaces across every neighborhood and street in Toronto, as well as in the subterranean foundations of every high-rise apartment complex and condo building is not the mark of a progressive, livable, affordable, and sustainable city, that the official plan envisions Toronto to be (City of Toronto, 2006). However, parking's entrenchment and forced intrusion into our lives goes deeper than that. The cost of building and maintaining parking, despite being a relic of last century's car-focused planning, is being thrust upon the home buyer or renter, without their consent. In a model of parking sold force-bundled with the residential unit, which I've learnt through interviews with industry stakeholders and market participants is the norm for certain residential unit sizes, home buyers are not being given a choice with regards to the purchase and ownership of parking. (Gabbe & Pierce, *The Hidden Cost of Bundled Parking*, 2017).

The impact of this forced parking space goes even further than this. Not only has the market been oversupplying residential parking due to the previous minimums-focused parking requirements, but it might also be nudging people who don't originally own cars to purchase one, converting commuters who are neutral or not originally interested in owning a car, towards purchasing one (Whillans, et al., 2020). There can be several explanations for this behavior – the 'sunk cost fallacy', for example, where the home buyer is swayed towards buying a car since they already 'invested' in the cost and space of residential parking (despite not actively wanting to buy parking in the first place). This results in a case of self-perpetuating market failure that can only

be stopped by planning and policy intervention, and an example of outdated car-focused infrastructure and planning design that sustains the unsustainable car-dependent lifestyle typical of North American cities (Shoup, *The High Cost of Free Parking: Updated Edition*, 2011). Alongside this important dimension of parking, there are other direct and immediate impacts of residential parking as well. Figure 2 provides a summary of issues and problems associated with parking.



Figure 2 - The problem with excessive parking; a summary

Waking up: Minimums out, maximums in

In 2020, Edmonton became the first major Canadian city to remove minimum on-site vehicle parking requirements city-wide from its zoning bylaw. What this policy revision meant was that developers, homeowners and businesses were now free to decide how much on-site parking to provide on their properties based on their needs and activities (City of Edmonton, 2022). Then, about a year after Edmonton's decision, the City of Toronto held a series of public consultation meetings and reached a similar decision: eliminate minimum parking requirements for new developments, city-wide. Toronto also decided to place maximum requirements for parking construction for certain housing types (Toronto City Planning Division, 2022). Edmonton and Toronto are not the only major North American cities who have witnessed a change in their parking requirements. A similar trend can be seen in neighboring United States; Buffalo, New York became the first major US city to eliminate minimum parking requirements city-wide in 2017, and since then, a number of major North American cities have followed suit, such as San Francisco, Portland, Minneapolis, Jackson, and Raleigh, as well as Mexico City, Mexico. None of these cities have any parking minimums today – instead, they have parking maximums (Parking Reform Network & Strong Towns, 2022). Figure 3 is a map created by Strong Towns and the Parking Reform Network that shows all the cities in North America who have removed parking minimums. Several other, smaller cities can be seen on this map.

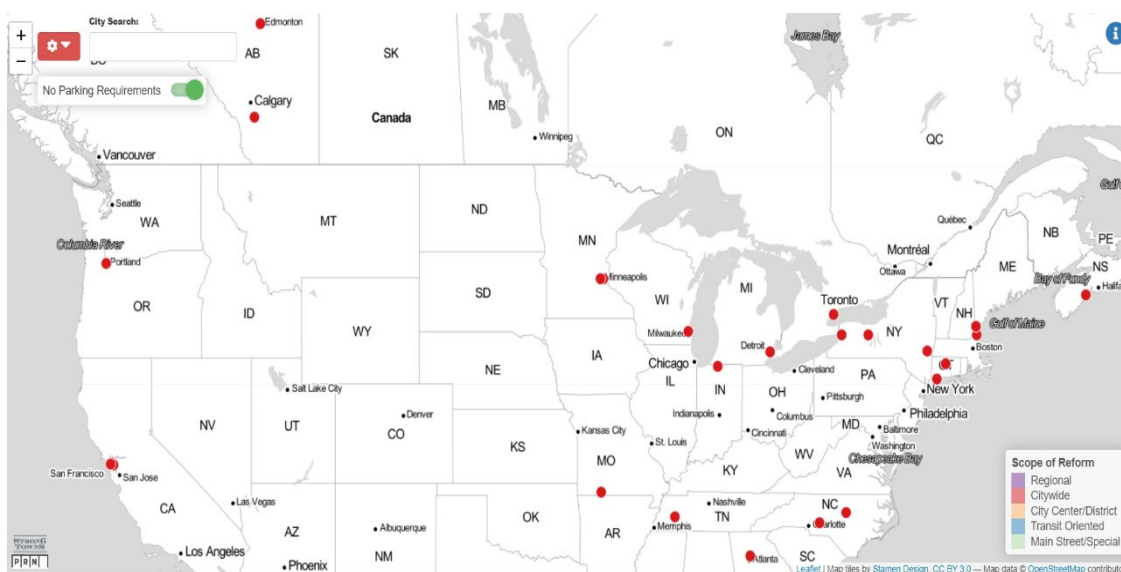


Figure 3 – US and Canadian cities with no parking minimums in 2022. Source: (Parking Reform Network & Strong Towns, 2022)

And while these cities embraced a city-wide level of parking minimums removal, there are many, many more North American cities, such as New York City, Nashville, Houston, Washington DC, Kingston, Ontario and Montreal, Quebec, who either removed minimums from certain areas such as from central business districts (Manhattan in the case of NYC), or from areas near transit or built around transit. Other cities, such as Austin, have retained some aspects of the original requirements, such as minimums for accessible parking, but have removed minimums for other parking in central areas of the city (Parking Reform Network & Strong Towns, 2022).

There are also cities who've removed parking minimums on certain housing types, such as Ottawa, Ontario, which has no residential parking requirements for buildings less than 4 stories, Calgary, Alberta, which has no minimums for non-residential land uses, and Boston, MA, which in 2021, eliminated parking mandates for developments with more than 60% affordable housing. Yet other cities, such as Alexandria, VA, have not eliminated minimums, but have reduced minimums in some capacity, and offer further reductions to multi-family/affordable housing land uses if close to transit. Very recently some states have also passed bills mandating their cities to offer some relief from parking minimums in some capacity, such as in the form of reductions on certain housing or in certain localities. These states are California, Oregon and Connecticut (Parking Reform Network & Strong Towns, 2022).

Numerous North American cities are enforcing parking maximum requirements, restricting developers from building too much parking. Outside of the ones already mentioned, other major cities are Seattle; Chicago; Durham; Jersey City; Mexico City; Surrey, British Columbia; and Kingston, Ontario (Parking Reform Network & Strong Towns, 2022).

Why are we seeing this trend take place? Why are more and more cities in North America gradually removing or reducing parking minimums and introducing maximums instead? What is the link between the removal of parking minimums/introduction of maximums, and car dependence, and in turn, our conceptualization of the city? These questions will be addressed in subsequent sections.

Chapter II - Toronto's transformation

Parking in Toronto; background and context



The history of cars and parking in Toronto is similar in many ways to that of the United States and the rest of North America. The postwar period transformed the city and region into an auto centric ecosystem, with highways, suburbs, sprawl, cars, and of course, parking (Wheeler, 2003); (Solomon, *How Private Transit Hobbled Sprawl*, 2007); (Lewyn, 2010). According to (RCCAO & Ryerson Urban Analytics Institute, 2019), in an article published by the *Globe and Mail* on July 7, 1948, an increase in traffic to downtown Toronto from the suburbs was highlighted. The newspaper report stated that more than 105,000 automobiles were observed to be headed to downtown where the parking lots had capacity for only 16,500 vehicles. The story described the congestion in downtown Toronto as “Suffering Acres.” Like other cities in North America,

minimum parking regulations in Toronto were born out of an attempt to reduce traffic congestion in the city. Before the existence of off-street parking, drivers parked vehicles on streets, inadvertently obstructing traffic flow and exacerbating traffic congestion. During the same period however, Metropolitan Toronto was able to make significant progress in providing public transit, and the region benefited from an investment in GO services (now operated by Metrolinx). Today, most trips made to downtown Toronto in the morning peak hours are done via public transportation. This has enabled the downtown core to continue to grow to become Canada's largest employment hub without having to supply parking for nearly half a million commuters working in Toronto (RCCAO & Ryerson Urban Analytics Institute, 2019).

However, up until the parking bylaw amendment at the end of 2021, revision of parking laws in Toronto had not matched the pace of the city's growing and evolving residential and transit infrastructure, as well as transformations in its cultural and behavioural identity. In fact, RCCAO's 2019 report noted that Toronto's minimum parking standards had not been meaningfully revised in the past three decades prior to that year. The report also stated that 'substantial changes in travel behaviour, technology, and services have taken place (in Toronto) that necessitate a review of fundamental planning concepts and related parking standards'. The bylaw that is currently in place today (with amendments) was drafted in 2013 and is known as Bylaw 569-2013. The ideas behind many of the parking requirements in this bylaw have their roots in the culture and needs of the 20th century, as well as in the external forces and industries at work during that time (Solomon, Introduction: Greater Toronto, Circa 1900, before the Era of sprawl, 2007).

According to the original Zoning Bylaw 569-2013, in downtown Toronto, (known as Policy Area 1), builders were expected to provide 0.3 parking spots for a bachelor condo up to 484 sq. ft; 1 spot for a bigger bachelor unit; 0.5 parking spots for each one-bedroom condo; 0.8 spaces for a two-bedroom unit and 1 parking stall for condos with three or more bedrooms (RCCAO & Ryerson Urban Analytics Institute, 2019). However, a significant proportion of recent developments did not find it viable to follow these requirements, choosing to apply for costly, time-consuming minor variance applications instead. Nearly half of approved applications had constructed parking spaces below the minimum required by the ZBL (Toronto City Planning Division, 2021). Negotiation is key to development application process, according to Toronto transportation planning program manager Hain, as cited by the news media agency *Toronto Star*.

In Hain’s words, “Every (development) application involves negotiation. The city is quite willing to work with developers to trade-off parking in favour of other features we want to achieve like more public ground space for pedestrians, more bike parking, better amenities for the community” (Kalinowski, 2021).

The City of Toronto’s presentation in its September public consultation meeting, as part of its review of parking for new development conducted in 2021, observed that developers and realtors have noticed declining trends in car ownership and usage and have been trying to respond to this new lifestyle and market trends (Toronto City Planning Division, 2021). The *Toronto Star* cites realtor Andrew Harrild of *Condos.ca* stating that, “Among downtown home buyers, the desire for parking has declined in the last decade. Ten years ago, a unit without a parking spot might be considered less valuable.” This is no longer the case in the downtown area, where there is a plethora of transport alternatives. Harrild is further cited as saying, “For a smaller unit, a bachelor or one-bedroom, it doesn’t hurt re-sale value if the condo comes without parking...I can see it (not having to pay for parking) being a boon for first-time buyers who might be able to put that \$50,000 or \$60,000 towards maybe buying a bit more space, maybe getting a den and reducing the monthly fees”. This isn’t necessarily a one-time cost, either. The monthly maintenance fees on a homeowner’s parking spot can go up to \$120 a month, with an average of about \$50 or \$60, according to Harrild. The cost of a parking spot can thus be the difference between a first-time buyer being able to afford a condo or not (Kalinowski, 2021). This idea will be discussed further in Chapter III, in the subsection focusing on the relationship between parking and housing costs.

These observations are echoed and/or reported by other prominent news and media agencies (both general news agencies as well as specifically real estate and planning-related ones) in recent articles (Davis, 2021); (Moore, 2021); (Rolheiser, 2021), as well as by land use law firms (Davies Howes LLP, 2021). Moreover, while the City of Toronto’s review of its parking laws only began officially in 2021, the issue has been discussed in previous years. For example, in two articles by CBC News (both published 2019), one of which discusses parking’s link with affordable housing (Pelley, 2019) two articles by Livabl (2016 and 2017), with the 2016 article discussing a proposal for an 80-storey Toronto condo that includes no on-site parking (Sherman, 2016), and an online post by Ryerson University’s (now retired) City Building Institute, which uses a GTHA-wide lens to discuss the growing awareness of reducing parking minimums among

municipalities (Ryerson University City Building Institute, 2016). For a complete list of mentioned sources and articles, please consult the ‘references’ section at the conclusion of this paper.

The City of Toronto conducted a comprehensive review of its parking requirements policy throughout 2021, concluding in December 2021. (Toronto City Planning Division, Review of Parking Requirements for New Development, 2022). A ‘Report for Action’ sent to City of Toronto’s Planning and Housing Committee in January 2021 by the City Planning Division, states that a review of parking requirements was critically needed. It mentioned how Toronto’s Official Plan “emphasizes the importance of getting the basics right, including embracing sustainability and creating compact complete communities served by streets made for walking and by an attractive transit system.” The report added that this vision would best be supported by policies directed at reducing auto-dependence and limiting the amount of land occupied by automobile parking. It explained how underground parking is pricey, demonstrating a concern that parking may be oversupplied. It concluded that use of parking maximums for certain areas was viable (Toronto Chief Planner and Executive Director, 2021)

This report was Toronto’s first parking review since 2013 and was pioneering in its consideration to replace parking minimums with maximums instead (Kalinowski, 2021). The review was also a reflection of the city’s growing focus on environmental and affordability issues, according to Toronto transportation planning program manager Michael Hain who believes that the policy revision can bring about a transition away from car dependence: “From the environmental perspective, this is really trying to shift away from car use and it’s about making it easier to implement different sorts of housing so people can live in the housing they want and increase the supply so hopefully prices can come down” . Between 1986 and 2016, car ownership declined from 1.2 vehicles per household to 1.02, and “most of that drop was due to decreasing car ownership in apartments, where it went from 0.84 cars per household to 0.72 cars” (Kalinowski, 2021).

Richard Lyall, president of the Residential Construction Council of Ontario (RESCON), believes that the city parking review was overdue, based on the falling interest in car ownership by young people, the rising popularity of car-sharing, and the likelihood of automated vehicles in the future. According to Lyall, it costs between \$50,000 and \$100,000 to build a single parking spot. This cost is passed on to homebuyers, many of whom no longer want to or can afford to own

cars. Lyall is further cited as saying that most parking supply belongs to underground parking, in the downtown, and water tends to complicate the construction. But it's not just water – in many areas, subways and underground infrastructure can come in the way as well; for example, promotional material for a recent condominium proposal at 315 Bloor Street West advertises the condo's strategic location near Spadina subway station, but mentions that due to the subway line running right below the condo area, only limited underground parking is offered. The ability to offer less parking spaces than the minimum requirement as stated in the Zoning By-Laws (ZBL) exists through the process of minor variance applications and ZBL amendments; but this an expensive process that can be time-consuming and cumbersome. All these costs are passed over to the home buyer or renter. Moreover, Lyall says, "I was just on a call with a rental development company trying to reduce the amount of parking required because they say once they get four levels underground that makes the project impractical" (Kalinowski, 2021).

Based on research on media articles related to the issue of parking and parking regulations in Toronto, it appears that industry stakeholders and members of the public looked forward to a removal or reduction in parking minimums. Through my interviews with relevant stakeholders, I found this to be generally true. However, the developers that I spoke to weren't confident about cost savings from reduction of parking construction to translate into lower housing prices. This is discussed more fully in Chapter III in the subsection on the relationship between costs and parking construction.



Figure 4 - Original infographic. Data source: (Toronto City Planning Division, Review of Parking Requirements for New Development, 2022)

Amendment to Bylaw 569-2013

The vision for Toronto as described repeatedly in the city’s Official Plan is one of affordability, sustainability, liveability, and an environment that encourages the use of public transit, as opposed to private cars. To quote directly from the Plan, the future of Toronto is perceived as containing “vibrant neighborhoods that are part of complete communities; affordable housing choices that meet the needs of everyone throughout their life; attractive, tree-lined streets with shops and housing that are made for walking; (and) a comprehensive and high-quality

affordable transit system that lets people move around the City quickly and conveniently...” Furthermore, in its “Principles for a successful Toronto” section, the Plan emphasizes the need for public transit to be universally accessible and buses and streetcars to be an attractive choice for travel. Transportation options mentioned in the Plan include the TTC subway, the LRT, streetcar and bus lines, the GO Transit rail network, railway corridors and railway yards, the city-wide bikeway network, a system of sidewalks, pathways and trails, and potential use of hydro corridors for transit facilities, bikeways and walkways (City of Toronto, 2006)

The City of Toronto’s review of its parking requirements policy, which began in January 2021, involved six public consultation community meetings, with three in June and September 2021, respectively. Through these consultations, City Planning staff¹ sought the public’s feedback on the proposed amendments to parking requirements in the city-wide Zoning By-law 569-2013. These meetings were attended by relevant stakeholders such as developers and construction agencies. The City’s review and decision process concluded in December 2021 with an amendment to By-law 569-2013. Several changes were introduced to the bylaw; specifically, minimum parking requirements for new developments were eliminated city-wide, and maximum requirements that varied across different locations (depending on access to public transit) were introduced instead for certain housing types (Toronto City Planning Division, Meeting Presentation: Review of Parking Requirements for New Development, 2021).

An important driver of the City’s review on parking requirements, which was presented in all these meetings, was the change in the guiding principle behind the requirements. The existing guiding principle behind parking requirements was “Parking zoning standards should require the minimum responsible amount of parking for a given land use.” Whereas the new guiding principle is “Parking zoning standards should allow only the maximum amount of parking reasonably required for a given land use. Minimums should be avoided except where necessary to ensure equitable access, (such as for accessible parking or in areas which would be difficult to serve with transit).” As repeatedly emphasized in the public consultation meetings and in the resulting reports, this is in accordance with and supports the goals described in the city’s Official Plan.

¹ Referenced to simply as ‘the City’ from here on out.

Among the many dimensions of the parking requirements issue, an important one that the City discussed in its presentations in the public meetings was the link between parking requirements and housing affordability. In summary, the City stated that: (Toronto Chief Planner and Executive Director, 2021)

- Increasing the supply of affordable housing is a Council priority.
- A prevailing comment from affordable housing advocates and the development industry has been that parking minimums increase the cost of housing, by adding to construction costs which may in turn be passed on to residents.
- The ability to avoid the cost of parking by choosing housing without parking is limited by the existence of minimum parking requirements.
- Some of Council's recent decisions recognize that the current automobile parking standards represent a barrier to the City achieving its housing vision.
- In fact, typical underground parking costs in the GTA are around \$160-\$200 per sq. ft.... (and) the space required for a typical parking space is about 300-400 sq. ft. (Therefore) the total cost of a single underground parking space can range from \$48,000 to \$160,000.

To further the argument that parking minimums need to be removed, the City also identified the difference in the minimum number of parking spaces stipulated for an area by the zoning bylaw for new developments, and the actual parking spaces that were constructed after negotiation with the City and/or successful minor variance applications. In a document that can be found on the City of Toronto's official webpage for its Review of parking requirements for new developments (Toronto City Planning Division, Comparison of Parking Required and Approved / Constructed in Sample Developments under ZBL 569-, 2021), the City has presented a table which indicates significant differences for several developments – for example near the Dundas St / University Ave intersection, a development project was required to include a minimum of 1183 parking spaces, but only 191 parking spaces were constructed for the project. Part of this table is shared below. In fact, around 46% — (473 of 1,033) — of development applications that received at least one approval in the fourth quarter of 2019 had parking below the minimum standard. In mixed-use developments, which may or may not include residential units, 81% received approvals with less than the minimum parking requirements. The story was different for single homes and townhouses, where 76% received approval for more parking than the rules mandate.

Nearest Major Intersection to Development	Minimum Parking Required per ZBL 569-2013	Parking Approved / Constructed	Parking Approved / Constructed relative to ZBL 569-2013 Requirement
Bloor St / Jane St	301	253	-48
Carlton St / Yonge St	622	201	-421
Danforth Ave / Victoria Park Ave	597	230	-367
Dundas St / Royal York Rd	134	116	-18
Dundas St / University Ave	1,183	191	-992
Eglinton Ave / Kipling Ave	295	204	-91
Eglinton Ave / Yonge St	696	214	-482
Finch Ave / Yonge St	413	172	-241
Lawrence Ave / Birchmount Rd	487	496	9

Sheppard Ave / Bathurst St	152	152	0
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Table 1 - Minimums vs actuals built. Source: (Toronto City Planning Division, Comparison of Parking Required and Approved / Constructed in Sample Developments under ZBL 569-, 2021)

In a public consultation meeting held in September 2021, the City presented a pair of charts (Figure 5 below); one showing trends of declining proportionate car usage for work and school trips (from around 23% in 1986 to around 16% in 2016 for downtown households in Toronto, and from just above 40% in 1986 to around 37.5% in 2016 for households living in the rest of Toronto), the other, increasing proportionate share of bicycle usage for the same trips. The City also showed charts (Figure 6 below) demonstrating an overall increase in the proportion of car-free apartment households in Toronto (from approximately 35% in 1986 to about 40% in 2016), as well as a recent decrease for non-apartment households for the same (Toronto City Planning Division, Meeting Presentation: Review of Parking Requirements for New Development, 2021).

Initial Findings: Travel Patterns

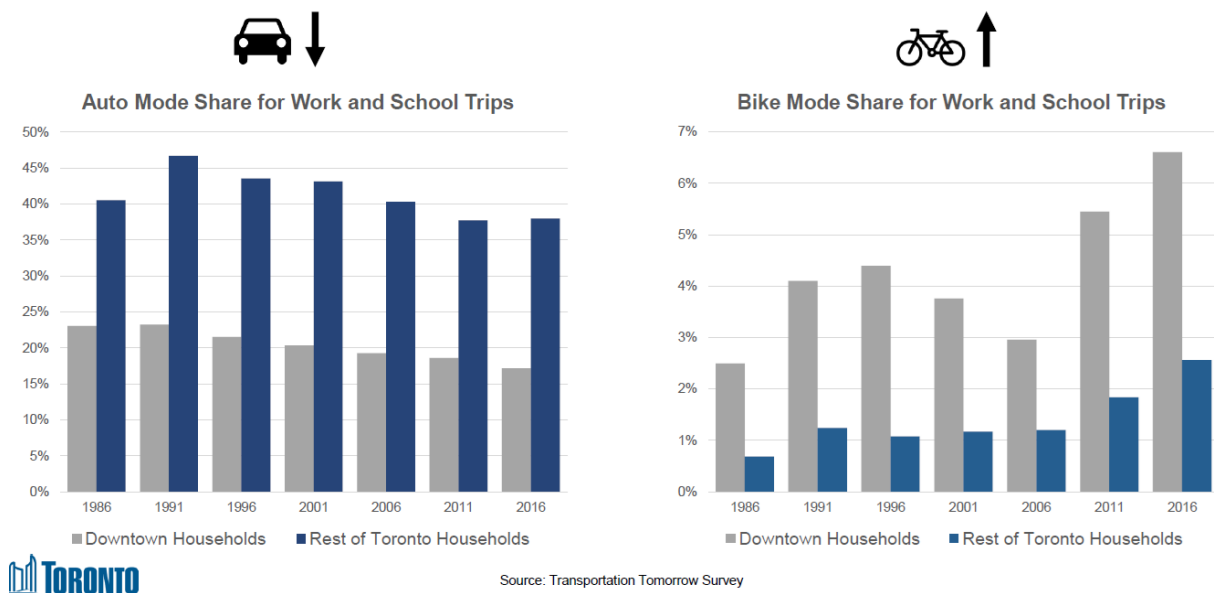


Figure 5 - Travel Patterns. Source: (Toronto City Planning Division, Meeting Presentation: Review of Parking Requirements for New Development, 2021)

Initial Findings: Auto Ownership

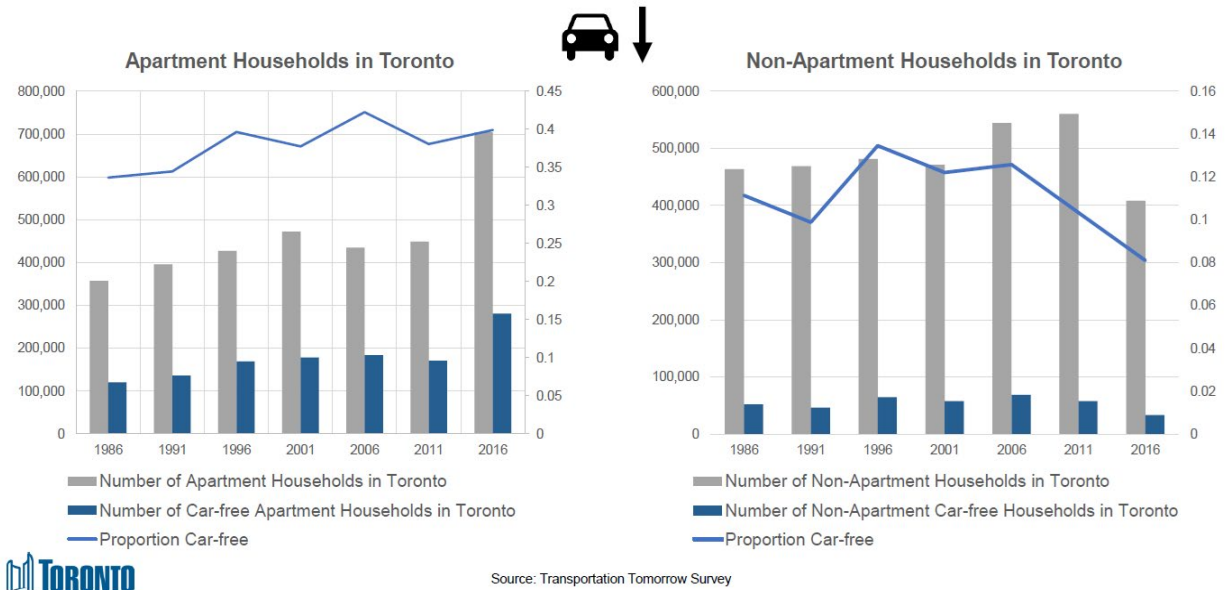


Figure 6 - Auto Ownership. Source: (Toronto City Planning Division, Meeting Presentation: Review of Parking Requirements for New Development, 2021)

Reception and concerns

As discussed and identified in the “Parking in Toronto; background and context” subsection of this chapter, in general, the need for removing or reducing parking minimums was universally recognized, and the City was met with support from the public in its new approach towards parking requirements. Some key concerns that were brought in the public consultation meetings leading up to the policy revision were: (Toronto City Planning Division, Review of Parking Requirements for New Development, 2022)

- Sufficient space for service vehicles and loading
- Concern about managing street space / Spillover of parking into neighbourhoods
- Equity impacts (accessible parking and people not well well-served by car alternatives)
- Lack of trust that proposed formula maintains accessible parking

- Uncertain cost of providing electric vehicle infrastructure (this was another important change enacted through the policy revision)

Some news articles did report that while many supported the City's new direction with its parking policy, certain groups voiced their disagreement towards the City's new ideas towards parking maximums. For example, the Bloor East Neighbourhood Association 'urged' the city to "include property managers and condo reserve fund experts in the parking review consultations", stating that "buildings struggle to accommodate visitor parking and service vehicles that may need to be parked for extended periods" (Kalinowski, 2021). Real estate news agency Storeys cited PSR real estate broker Dorian Rodrigues as saying "previously (before the pandemic) the need for a parking spot was very desired. Even homeowners who didn't necessarily drive and needed a spot, preferred to have one because of the ability to rent it out to other residents in the building." According to Rodrigues, because this additional flow of income helped contribute to mortgage payments, parking space was important for home buyers. The article cites him further as saying "I strongly believe parking is very important. They should not impose a maximum on parking spaces because the builders will likely put fewer spots than what is currently being offered. (Smith A. , 2021)" Concerns and potential adverse impacts are explored in further detail in the proceeding section.

Chapter III – Insights and learnings from interviews

Are we building more parking than we need?



I investigated several contentious issues related to parking requirements in my discussions with stakeholders, who generally had unique opinions and perspectives on these topics. The current mismatch in parking supply and demand in certain areas of the city, was not one of these contentious ideas. Everyone, including the senior executives at development and construction companies, as well as the transit and land use planners at Metrolinx/City of Toronto that I talked to, unanimously agreed that an excess of parking supply exists in many areas of the city, and that a significant proportion of parking stalls are being left unsold and unused. This is despite the significant costs of building these parking stalls (especially underground parking stalls); and someone must pay for these costs.

In my interview (on June 28th, 2022) with Paul De Berardis, Director of building science and innovation at the Residential Construction Council of Ontario (RESCON), I learnt that more and more development and construction agencies have been reporting unsold parking stalls to

RESCON. According to Paul “There's been a growing trend of essentially, a mismatch between the amount of parking provided and the demand from the market. So often, builders and developers were being left with parking spots that they did not have buyers for, or they were sometimes forced to attach parking stalls to certain sizes of housing units just to ensure sales happen. So, there was clearly lower demand than what was being provided based on the bylaw requirements.” RESCON has previously publicly stated that their data shows that in new condo projects, an average of 33% of parking stalls were left unsold. One builder, according to RESCON, had 90% still available for sale as a building neared construction (Davis, 2021).

This perspective was mirrored by the other stakeholders that I interviewed. Orli Shwartz, (interviewed June 6th, 2022), Director, Development Approvals at Lanterra Developments Ltd., shared with me that as a private developer, they were at times left with unsold parking in projects across the city, and in some cases, wouldn't be able to find interested buyers for years: “when we build condos, we are sometimes stuck with excess parking, whether it be in the downtown core, or whether it be in like Midtown, around Lawrence and Dufferin area, or all the way up to Steel's... (because of) minimum requirements that were set out in bylaws. Developers end up building (more parking than necessary, according to those requirements), and for months, afterwards, years, they have trouble selling those spaces.” According to Elsa Fancello (interviewed July 22nd, 2022), Vice President Planning & Development at Castlepoint Numa, a real-estate development firm, “(Building) parking in the City of Toronto is very expensive, especially in certain geographic areas here. You know you're spending \$150,000 per parking spot. And you can never recoup that in the marketplace. So, all of the revenue is just lost, or all of that cost is just absorbed into, just the delivery costs of that specific project.” The costs associated with parking and the factors that determine them are discussed in greater detail in the proceeding section.

The idea that parking supply exceeds demand is also corroborated by the City of Toronto's various reports and presentations which include relevant data and figures (Toronto City Planning Division, Meeting Presentation: Review of Parking Requirements for New Development, 2021); (Toronto City Planning Division, Comparison of Parking Required and Approved / Constructed in Sample Developments under ZBL 569-, 2021), as reviewed in the first subsection of Chapter I of this paper.

Patrycja Jankowski (interviewed June 21st, 2022), Senior Advisor, Network Planning at the provincial transportation agency Metrolinx, noted that in the parking garage of her residential building, nearly half of parking spaces were empty and unused: “the parking garage that I have here - it's very empty; it's never, ever full. So, I don't know why there are so many empty spaces in this building.... I would say the capacity might be just over 50% of it that's being used...there's always empty spaces; it's pretty vacant”.

Cases where the opposite is true – i.e., demand exceeding the number of parking stalls planned or built are less common, however they do exist – for example certain projects or areas where public transit access is poor, and car-dependence is very high. I interviewed Marcus Gillam (interviewed on June 5th, 2022), Chief Executive Officer at Gillam Group Inc., a construction company that works closely with developers. Gillam called the policy revision a “game-changer”, praising it for its liberation of development/construction agencies from minimum requirements, but expressing the importance of realizing that every development project has different needs and caters to a different audience. Gillam shared that

“There's no question that developers are opting to build less parking, particularly in condos. But I have seen situations where - I was involved in a project in the Don Mills area, and the client was developing quite a large rental apartment...and (their potential business partner told them)...if you want to rent out this product in that area, you need more parking; you need at least 1 or 1.2 units per spaces per unit....it's necessary, or you'll have a hard time renting it and you won't get the actual rental rates. So anyways, what I think is brilliant about this new legislation is that it allows developers flexibility to put in as much parking as they need.”

This reflects how Toronto still has a long journey to go towards realizing its vision of reducing car dependence city-wide and becoming more sustainable. However, Michael Hain, (interviewed on June 14th, 2022) Program Manager at the City of Toronto's City Planning Division, who led the team that implemented the bylaw amendment removing minimums and placing maximums, believes that:

“[The policy change is a] critical step towards creating a sustainable future, and if we (the City) continued requiring parking, there is no way that we would reach the sustainable future that we want. So, we don't think it will be a big step, we think, it's a necessary step.”

Thus, while the policy revision was indeed spurred by developers pushing for greater freedom from parking requirements, it was also driven by the City of Toronto's sustainability goals, such as reaching 'Net Zero by 2040'. In my interview with Mr. Hain, I learned that before the policy revision, most developers had been applying for minor variance applications to grant them a reduction in the minimum parking spaces that they had to build. In fact, under the old parking standards, about 80% of applications for mixed-use or apartment type buildings were already applying for zoning bylaw amendments to lower their parking requirements. This made the City realize that its parking standards were not appropriate in most contexts. To quote Mr. Hain:

“The industry separately was telling us that even with these reduced parking supplies that they had proposed, in many cases parking was going unsold. Or they would have to sell the parking at less than the cost of construction of the parking. So, in either event there was a subsidy going to people buying this parking from people that were not buying the parking because the developer is still making a profit on the development. So, across all of the purchasers, within the development, that parking was being paid for somehow, and if not by the people buying the parking, then it was by the people that were buying other things.”

Mr. Hain also shared with me that the current maximums implemented are not very restrictive, and are based on the previous parking minimums, but in later policy updates and revisions, and with evolving public transit infrastructure, they will be aligned further with Toronto's vision for less car-dependency.

Unsold parking stalls result either in the overall development project becoming more expensive – all parking construction costs, even those attributed to unsold parking stalls, are absorbed into the overall project cost, and are therefore paid by the end user (any buyer or renter) – or it results in developers or condo management agencies 'bundling' parking stalls with residential units; again, a scenario where the stalls are paid by the end user. Bundling is neither market-efficient from an economic perspective because it removes choice from buyers/renters and forces them to pay for a feature or service that they may not necessarily want or need, nor is it beneficial in a societal sense, and is in fact socially detrimental, since it encourages car-dependency and perpetuates the cycle of expensive and unsustainable car infrastructure construction fueling living spaces unfriendly to public and active transportation, and urban sprawl. Bundled parking

may also be responsible for ‘nudging’ people who don’t originally own cars and are neutral to owning one, to purchase one (Whillans, et al., 2020). One of the stakeholders I interviewed revealed me to that a recent property purchase that they’d made came bundled with a parking spot that they weren’t seeking. They were able to absorb the cost of the spot (in the form of the higher residential unit price), but it’s clear that given the current housing affordability crisis in the city, any margins in the price of a home can be the difference between having the ability to purchase/rent a home or not, for many people.

As mentioned in Chapter I, the alternative – unbundled parking, where homes are sold independently and separately from parking spaces, is certainly a solution (Gabbe & Pierce, *The Hidden Cost of Bundled Parking*, 2017). An important question to ask then, is whether bundling of homes is the norm in Toronto’s housing market. Unfortunately, there is no publicly available data that one can access for this information. From the feedback that I received from development and construction agency stakeholders however, it seems that for certain residential unit types, bundling is indeed the norm. According to Mr. De Berardis, Director at RESCON, when purchasing smaller units such as 1-bedroom units and studios, parking is optional to the purchaser; however, for larger units such as 2-bedroom plus units, parking stalls are often times sold bundled in with the residential unit – buyers/renters in many cases can’t buy or rent the residential unit separately. As discussed previously, bundling parking in with homes has significant social costs and externalities, and perpetuates car-dependent lifestyles; it is an important and impactful issue for the City of Toronto to tackle as a next step.

[The case of the vanishing costs: will less parking construction reduce new home prices?](#)

Identifying that we have an economic problem of parking supply exceeding demand is a great first step, and public reception to the city’s bylaw amendment to rectify this problem has been “overwhelmingly positive”, as stated by Gillam, a perspective mirrored by other stakeholders. Stakeholders look forward to the positive outcomes of this policy change, such as freedom for developers in constructing parking, and the resulting perceived cost savings on project development. But what will these cost savings look like, and who will they benefit exactly? Toronto is one of the most expensive cities in the world to live in, especially in terms of housing

costs, and any reduction in home prices could help alleviate the current housing crisis (ref). The stakeholders I interviewed unanimously agreed that the construction of parking units is extremely expensive and doesn't just simply add to the overall cost of a development project – it dictates the financial feasibility of it – often being a make-or-break for the project. Mr. Gillam shared that:

“Probably the single biggest issue we deal with on projects revolves around parking...Because the reality is that parking drives the number of suites and in many cases the saleable space, or the rentable space, on projects. And so often, the feasibility of these projects is tied to parking; like profitability of the highest and best use revolves around strategies with respect to parking.”

Projects that include underground parking are particularly affected because underground parking is significantly more expensive than above-grade parking, according to development and construction companies. Through my investigation, I learnt that parking construction costs, especially for underground parking, can be highly variable, depending on things like scale of the parking garage and project, the ‘efficiency’ of the parking garage (large garages will result in economies of scale while per stall costs of small parking garages will be higher) and if there are any required ‘premiums’, which are site-specific technical issues such as contaminated soil, whose resolution incurs significant costs to developers. The cost of building each parking stall is thus sensitive to technical nuances and attributes of each individual project, and even within the project (for example, a parking stall that’s near the surface level versus one that’s at the deepest level), but in general is very high. It’s also affected by stormwater drainage considerations, and other requirements that the City of Toronto mandates on developers. So, simplifying this highly variable cost to a single ‘average’ estimate may not be the most accurate method of representation. Instead, average parking costs are expressed as a range estimate.

In its September 2021 public consultation meeting on parking revision the City of Toronto shared that the cost range of parking is in the vicinity of \$48,000 to \$160,000 per parking stall (Toronto City Planning Division, Meeting Presentation: Review of Parking Requirements for New Development, 2021). In my meeting with Michael Hain from the City of Toronto, I learnt that parking costs are now estimated to be anywhere between \$50,000 to \$200,000. Paul De Berardis from RESCON stated that the average cost has increased from \$80,000 to at least \$100,000, and Marcus Gillam from Gillam Group shared that per unit parking construction costs can vary from

\$60,000 to \$150,000. Finally, Elsa Fancello of Castlepoint Numa reached out directly to a development cost consulting company she was in correspondence with, and shared this quote with me:

“When looking at the cost for parking garages – the average cost per stall can vary considerably depending on the scale of the parking garage, the efficiency of the parking garage and of course if there are any premiums such as excludes raft/tanking, excessive dewatering and contaminated soil. For larger parking garages say 100,000 sf or more – we would allow a cost to build the below grade of \$225 psf (excludes raft/tanking, excessive dewatering and contaminated soil). For smaller parking garages we would allow \$275 psf. For large parking garages over 100,000 sf – you would target an efficiency of 450 sf per stall (this of course includes for all drive aisles, M&E, back of house etc. So, if we use 100,000 sf x \$225 = \$22.5 MM. 100,000 sf / 450 sf per stall = assumed no. of stalls of 222. \$22.5 Mm / 222 stalls works out to be \$101k per stall. To this you also need to add 3% for Construction Management Fee, 5% for construction contingency and then also say 35% for soft costs including financing, permits, design etc. That takes us from \$101k to \$147k per stall. The above allowances would be even higher on a smaller more inefficient parking garage. Also, all the above EXCLUDES raft/tanking, excessive dewatering and contaminated soil. We just finished an estimate for a project where the parking garage was 140,000 sf over 2 levels. This site did have water issues, so it required a raft slab and full bath tubbing. That parking garage worked out to be \$335 psf which equates to \$176k per stall for construction only. We would still need to add for CM Fee, contingency, and softs so that would take it to **\$257k per stall.**”

Developer Orli Shwartz shared with me why deeper construction is so costly: “The overall cost to go down each level as you build (parking) obviously increases. So, when developers look at a building, and they do proformas and feasibility studies, you have to look at, you know, (how) the cost to go down each level gets absorbed in the parking...How do you make your money to cover going down - every level you go down, you also have to waterproof. So, the deeper you go, you know, the more engineering fees you incur and water diversion, water treatment; all those items you have to consider. So that adds the cost. And therefore, it gets - yes, it gets absorbed when you sell your units, but it also gets absorbed into the parking spaces.... I think the city kind of

caught on to how much parking was costing, like residential parking, thinking, this is crazy. It's almost, you know, you can almost get like, you can buy a car for less than a place to store it.”

It's clear then, that the construction of parking, especially underground parking, adds considerably to the overall costs, and therefore, to the final price of a development project. Home buyers/renters directly pay the cost of the parking construction when and if they buy a parking stall (or if they get the parking stall bundled with their home), but they also pay some of the costs even if they don't buy one in an unbundled model in a condo or other high-rise residential project. This is because, as reported by stakeholders, parking construction costs are absorbed into the overall price of the project – all end users (buyers/renters) share in these costs to some extent, even if they don't want or purchase parking. It is difficult for instance, to separate parking cost absorption from the condo maintenance fees charged to condo owners. We can conclude then that, at some level, the construction of parking does influence the cost of housing.

Does this mean that allowing developers to build less parking will reduce housing costs to home buyers and renters? In other words, does the reduction in parking minimum requirements translate to lower housing prices? When presenting this question to stakeholders, I got varied responses that unanimously acknowledged that building less parking does reduce overall housing costs, but were generally hesitant to place confidence in these savings being transferred from the developers to home buyers/renters, or for the savings to directly translate into reduced home prices.

Orli Shwartz for example, was confident that the freedom to build less parking would “definitely have an effect on the overall cost of a condo”, but with regards to whether or not it would translate into reduced prices for the home buyer, her answer was “I don't know, it is tough to say. I think at the end of the day, when you're doing your proforma, your cost to build is definitely cheaper (by building less parking). I don't know if it makes your sale price cheaper, because development charges are so high, you have to find a way to offset that. I just think it's one less thing that developers have to offset when they're pricing out the condos. But actually, one thing it would do long term is (to make) your operating costs are lower, and your maintenance fees would be lower. Because if you don't have a parking garage, you're not paying for the power wash, you're not paying for somebody to maybe walk (around for) security, (and) you don't have to pay for waterproofing for 20 years. So, your overall long term maintenance costs would be cheaper.

Which as buildings age, they actually get more expensive because more things break down. You need more work, right? That's how it would affect buyers, and especially renters.”

Through my discussions, I would find that other stakeholders would mirror her response. Developers claim that because building underground parking is so expensive, and drives the financial feasibility of residential projects, that any relief from being forced to build that parking and incurring those costs, can make certain projects viable that were previously considered unviable. In this way housing supply may increase since new projects are built due to the policy, possibly alleviating the housing crisis somewhat. But cost savings being translated into reduced home prices is not something that they anticipate. VP at real estate development company Castlepoint Numa, Elsa Fancello commented that while parking-related cost savings do help with the project proforma, “(any savings from) some relief in parking still don’t go to the developers’ pockets per se, because there's so many other costs that are increasing and taking away from the profit. But it helps make the numbers work to actually advance a project, because in order to get financed you need to show a certain rate of return.” She also stated that not having to build minimum required parking would result in non-monetary benefits to everyone, especially time savings due to less time towards project completion, as underground parking construction is a time-consuming process, and because the developer wouldn’t need to apply for tedious minor variance applications: “If you're able to reduce the amount of parking, you save time and you can actually start delivering the building sooner. So, if you're able to reduce parking by a full level or half level, or altogether, it's a huge, huge time saver.”

Metrolinx Senior Advisor Patrycja Jankowski told me that she wants to trust that developers “would be able to cut down on cost and be able to transfer those savings to the owner or the renter, but just seeing the way housing prices are constantly going up, they could still argue that, oh, you know, it’s just (absorbed into) the year over year real estate (price increase)”. According to Ms. Jankowski, the bylaw amendment would be more useful for establishing project viability for low-rise and mid-rise development projects who previously had to construct excessive minimum parking: “I hear about these cases of low-rise buildings....there's like 6 or 8 units or 12, and these parking minimums that can't be met because of this policy, and I think that's where it would help... especially since land parcels are increasingly smaller and smaller in those areas and building parking, especially underground, isn't really an option.” This could help towards

resolving the current “missing-middle” (a lack of mid-rise housing) situation in Toronto. Ms. Jankowski also believes that condo maintenance fees could be lower in future projects due to lower maintenance costs if entire levels of underground parking are eliminated as a result of the removal of minimums.

According to Mr. De Berardis, Director at RESCON, the bylaw amendment will lead to savings and benefits being realized by home buyers and renters due to the unbundling of parking from homes resulting from excessive parking no longer being built. He stated that in the previous model since developers were unable to sell parking stalls due to having to build more parking than required because of the minimum requirements, they would bundle the unsold spots with the larger residential units. Under the new policy, because excessive parking would go down, the market would incentivize developers to unbundle homes and parking, and this would in turn, benefit buyers: “those individuals who either don't own a car or don't plan to own a car or use transit exclusively - they no longer have to worry about being forced to own and maintain a parking stall that they have no need for”. Mr. De Berardis also commented on how the rental market in particular will benefit from the policy amendment. According to him, RESCON had received feedback from developers regarding rental projects, including affordable rental, not moving forward due to the old parking minimums. He stated that rental market segment was more likely to use public transit over owning a car and was particularly adversely affected by the old bylaw: “You could be adding easily tens of millions of dollars to a project for parking - and when you know that the market segment who you are catering to is not there, (you don't go ahead with it).” In his opinion, the policy revision should lead to greater rental housing supply, including affordable rental housing, due to less pressure on rental developers to provide minimum parking.

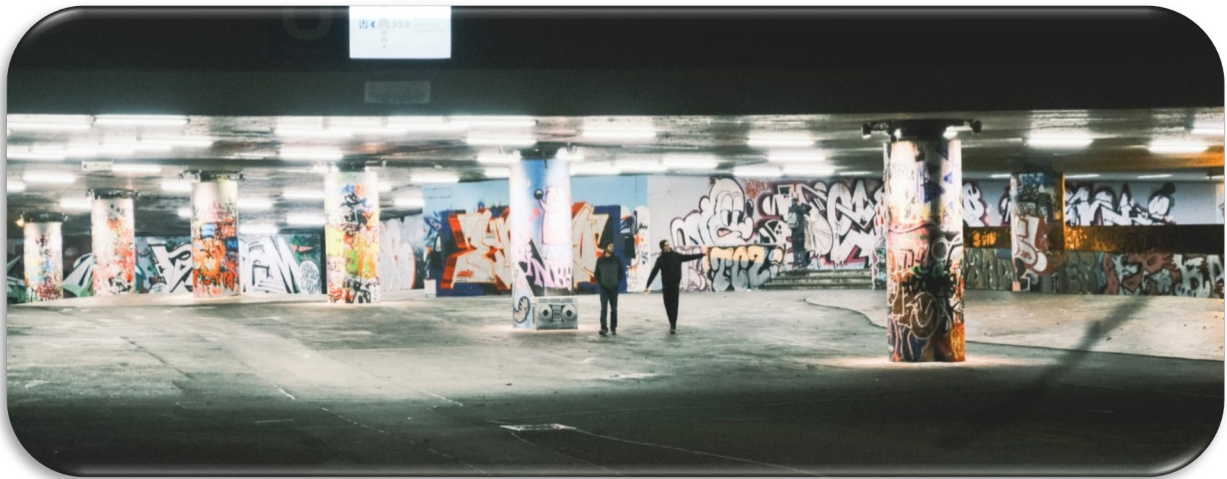
While moving from a bundled model of home-selling to an unbundled one is great, and more affordable rental housing being developed (even if marginally so) is fantastic, my question still remained – where will all the cost savings from reduced parking construction go? If building less parking means less project costs overall, why wouldn't they be transferred over to the end user – the home buyers and renters? I posed these questions in further interviews that I had with stakeholders – but I got similar responses; response such as “...all of the other costs to deliver projects are going up pretty dramatically, and with interest rates and development charges and construction costs and other kind of city policies that are affecting the bottom line, which - it's not

just profit, it's also, the need to demonstrate a certain return in order to get financed so. It's a bit of a wash.” And “the price to deliver (is lowered) slightly, but in exchange there's a number of other costs...it's pretty challenging to deal with...”, as well as “(We'll realize) some savings there, but in exchange there's a number of other implementation costs that are really making it challenging so it's...difficult just to focus solely on parking”. It's true that there are in fact other costs, and some have emerged recently – for example, the City has been having ‘capacity issues’ with their stormwater sewer system, according to Mr. De Berardis, and has been pushing developers to undertake the expensive process of waterproofing underground parking – a comment mirrored by most of the stakeholders, adding to the complexity and cost of constructing underground parking. And it's true that parking isn't the only factor driving up the costs of a project. However, based on stakeholder feedback, construction of underground parking is one of the most important and significant factors responsible for project cost, and in some cases, even for the financial viability of development projects.

I presented the question to Michael Hain, Program Manager for the bylaw amendment at the City of Toronto, and he informed me that the City employed a land economist consulting company, N. Barry Lyon Consultants Limited, to explore the resulting cost savings and their implications for home buyers/renters. The report that resulted from this study concluded that removing parking minimums is a positive step towards increasing housing supply and reducing the costs associated with ‘the delivery of homes’, but because housing prices are decided based on supply and demand, “in high demand areas we would not expect a reduction in parking to influence pricing.”, and in lower demand areas, “reduced parking could help bring housing to the market at a more affordable price point.” This implies that cost savings from reduced parking construction will likely be absorbed for the most part into developers’ profits, and thus the market will benefit developers in high-demand areas due to the low elasticity of demand for housing in those areas. A follow-up discussion on this is warranted, but outside of the scope of this paper. I would like to point out that ‘high-demand’ areas are, well basically the entirety of Toronto. The report does identify some areas - Weston Road, Guildwood Village or Jane Finch, where it states that the high-density housing market “is just beginning to emerge”. According to the report, it is in these areas that the cushion from the cost savings from reduced parking can incentivize developers to “bring housing products to market at a lower price point”, therefore offering lower-priced housing in theory, in these areas. The report also added that the elimination of parking standards could make

sites that were previously unsuitable for redevelopment, now feasible, thus increasing housing supply, and thus providing some relief to the current housing crisis, an idea echoed by the stakeholders I interviewed. The report also mentions the benefits of unbundling parking and homes, a point that I've touched on already (Conway, 2021).

Existentially confused spaces; Giving new life to unused parking garages



The City of Toronto is taking steps to prevent excessive parking from building up in the future, and this is reflected in its decision to remove parking minimums, but what can we do about the present? As discussed earlier, every single stakeholder that I talked to agreed that there is some level of excess, unused parking that is wasting valuable space. In a city where land is at a premium, and is becoming more valuable everyday, repurposing these lonely spaces would result in positive societal benefit, depending on how much it costs to repurpose.

Developer Orli Shwartz shared several potential ideas for repurposing unused parking spaces, including storage spaces, server farms, retail spaces, ghost kitchens, dance clubs, recording studios, car-share spaces, car-wash businesses, bike parking and bike share facilities. Other stakeholders I interviewed also mentioned different kinds of storage ideas as possible solutions,

but believed that it could be prohibitively costly and complicated to repurpose the spaces for human habitation, due to factors such as lack of sunlight and ventilation, which would be required for operating kitchens or retail spaces. A few stakeholders did share examples of singular cases of repurposed structures in Toronto (for instance, Michael Hain mentioned how the parking lots of a building at Adelaide and Church had been repurposed; this particular case, however, involved an above-grade parking garage). Can such repurposing be implemented for underground garages, and can it be scaled up for garages throughout the city? According to developers, it's all about the financial viability - making a business case for something like an underground dance club could be complicated, and would require an investor/interested party to be present and committed to the project before construction commences. With the social isolation of the pandemic coming to an end, we could be seeing continued increase in demand for such amenity and recreational spaces, and repurposed underground spaces could be used to meet that demand, especially for the winter months. One stakeholder suggestion I received, that could help in this context, was to explore the viability of expanding the city's current underground PATH system – a network of corridors that connects buildings in downtown Toronto – replacing some of the unused parking garage spaces/levels of these buildings with these transit corridors. The PATH system is heavily used, especially in winter, according to Metrolinx senior advisor Patrycja Jankowski, and expanding it would certainly make the city more walkable; albeit a small section of it. If not corridor expansion, unused parking spaces could be converted into social and recreational spaces complimenting the PATH system – the kind you already see in the lower levels of many office buildings that are connected by via PATH.

Repurposing underground spaces is expensive and developers may not be motivated to alter existing unused parking stalls in this way today, however, Michael Hain believes that with decreasing car ownership and usage over the coming decades, and increased demand for land as well as its rapidly rising value, making use of wasted space in prime locations, such as downtown Toronto's many underground parking garages, could become economically profitable, though the fact that parking is individually deeded could make the process of repurposing complicated. The City Planning Division is recommending City Council to conduct a study on how we can encourage the repurposing of unused parking spaces, according to Mr. Hain.

Converting private parking space to a model of shared parking space

Another way to reimagine existing unsold parking spaces is to use them for parking cars, since that's what these spaces were designed for, but to utilize them in ways other than individual or private parking – for example, for car-share and visitor parking. Services like Car2Go were driven out of Toronto because the city, in 2018, responding to the ire of some Toronto residents and councillors, decided to restrict Car2Go customers from parking in certain places. Car2Go wanted users to be able to park its 350 shared vehicles in residential areas. When it launched, Car2Go vehicles parked in the city's Green P lots. However, the company then directed its customers to park in any legal space, including in residential areas. This was not well received by many Torontonians - particularly those living in neighbourhoods where on-street parking wasn't perceived to be enough. The city then implemented new rules that would bar Car2Go customers from using nearly 10,000 parking spaces (Rieti, 2018). This was “a big missed opportunity” according to Patrycja Jankowski; and given that there is so much unused parking space today, it is unfortunate that a service that could potentially help in reducing car ownership and pave the way towards transitioning to less car dependence, was driven out of the city due to parking concerns. Ms. Jankowski believes that there is strong potential and precedent for using existing unsold parking spaces for car-share parking. She mentioned how some parking garages in Toronto in mixed-used spaces and buildings (naming College Park and Liberty Village as examples) do have some spaces for car-share, and this could be applied to more fully residential garages, given proper restructuring and security access considerations. She currently rents a parking space for her car in her building but uses a bike for ‘80% of her transportation needs’, using her car only for trips that are far out, or late at night, when she doesn't feel safe to bike, which are infrequent. The rest of the time, the car isn't serving any purpose, soaking up valuable space and resources (spent on maintenance of the parking stalls, etc.). Ms. Jankowski lives in downtown Toronto, where public and active transportation options are plentiful, and according to other stakeholders I interviewed, the expansion of car-share parking into residential parking would be very effective in that area, since cars are used less frequently.

Orli Shwartz shared with me that services like CommunAuto are popular downtown for car sharing and having more of those services at easy access would be useful. Car-share service

parking does exist in the bylaws, and according to Ms. Shwartz, one car-share space is equivalent to four private spaces. So, the city already did have some incentives in the law to encourage car-share parking to be built, even before the bylaw amendment, however, because car-share spaces are mandated to be placed in the visitor parking section, instead of the residential parking section (barriers between the two are enforced), it's still not simple to convert existing unsold residential parking spaces to car-share spaces, and this is a missed opportunity.

Similar issues surround visitor parking. Michael Hain shared with me one example of a condo corporation whose visitor parking spaces were not meeting demand for visitor parking, but the condo did have extra residential parking that was unsold. When a counselor asked the corporation if they'd be willing to convert any of the resident parking to visitor parking, the corporation responded that they weren't willing to spend any money to do that. Michael Hain stated that there may be ways to mitigate some of the costs of such a conversion to encourage this process. For example, if all the resident parking spots are owned by a unit holder, for the condo corporation to take it over and convert it into visitor parking, they would have to purchase the parking space and pay a land transfer tax. If the city really wanted to encourage that sort of conversion, then it could waive land transfer taxes or provide a credit on the land transfer taxes.

I was also curious about what stakeholders felt about finding ways to match existing unsold car parking supply to demand from outside the building that houses that parking. If we have so many unsold parking units in some buildings or other housing types in Toronto, and there are potential users elsewhere but nearby in the city who are ready to pay for these spots, why can't we encourage an environment where those potential users can purchase (or ideally rent) those spaces? I suggested ideas such as allowing owners of unused parking stalls to rent out or even sell the stalls to non-residents of their building. Most stakeholders I interviewed felt that security concerns and practical access issues would prevent such a scenario from materializing. Condo management companies would likely not be in favor of allowing residents to rent out or sell parking spaces to non-residents due to security concerns and having to share building access with non-residents. However, they felt that this idea could be possible and useful to implement in the car-sharing and visitor parking sections of the garage, which are separate from residential parking and would therefore not cause these issues. Again however, in a scenario where residential parking units are extra and visitor parking is not enough, which isn't uncommon, this wouldn't work. We need to

be able to implement a system or devise laws that encourage the conversion of non-residential into residential parking easily. Some stakeholders also felt that security issues can be resolved by implementing a thorough vetting process for securing a renter for the parking space.

All stakeholders unanimously agreed that converting unused car parking spaces into bike parking spaces and bike share facilities would be a low-cost, useful and effective method of utilizing unused spaces. This would also align with the City of Toronto's vision of sustainable transport.

Equity considerations and possible adverse impacts

All stakeholders agreed that removing minimums and placing maximums is a step in the right direction. Some stakeholders believed that there is potential for the policy to have imbalanced, or adverse impacts on certain groups. The most obvious possible impacts would be the provision of parking supply not keeping up with demand in car-dependent areas that have poor connections to public transit. According to Orli Shwartz, Toronto's public infrastructure in many parts of the city does not match the pace of this visionary policy; and cars are no longer a luxury, but a necessity for many people, especially those who are commuting into Toronto from outside peripheral areas. This has been compounded by the fact that the COVID-19 pandemic induced movements out of the city and further into the suburbs or remote locations, due to the work-from-home model gaining prevalence and popularity.

However, while it is true that Toronto is certainly not at a level where public and active transportation infrastructure has completely replaced the need for the car, this policy revision should not result in these adverse impacts, according to Michael Hain. The future-oriented nature of the policy revision, combined with the fact that the maximums are based off of the previous minimums and are therefore not too restrictive, and because the City adopted a location-specific zoning based maximums policy where maximums are higher in areas with poor public transit access, means that the policy is geared more towards the freedom of developers to respond to the market. It's expected therefore, that the demand for parking will better reflect and match the supply for it with the bylaw amendment.

Some group had concerns that because of the new minimums, on-street parking would be affected and residents of new developments constructed under the new bylaw would be parking their cars outside if enough parking was not provided in the new developments. Michael Hain informed me that the City has implemented a system of restricting parking permits to tenants in new developments in certain areas of scarce parking, to regulate the supply of parking permits and amount of parking on the streets. This would prevent spillover effects on on-street parking. Mr. Hain also told me that the City is investigating introducing reforms in on-street parking laws as well.

At a glance: what stakeholders are saying (a summary)

The stakeholders I interviewed all agreed that:

- There is excess parking supply in many areas of the city, and parking stalls are going unused/wasted.
- Introducing more bike parking requirements and infrastructure in buildings is aligned with the city's vision; and using existing unused car parking spaces for more bike parking and infrastructure is a practical, viable and effective solution to dealing with these spaces.

With regards to Stakeholders' unique perspectives, I've summarized these in the following table:

Parking supply	Costs of construction, and will savings go to buyers/renters	Alternative uses for unused parking spaces	Adverse impacts of policy? Equity, etc	Shift in modal usage from policy change	Other notes/special comments
Orli Schwartz, Director, Development Approvals, Lanterra Developments Ltd.	Parking is costly to build and maintain, but new policy may not result in reduced home prices to buyers/renters due to additional costs to developers, and ‘cost absorption in overall project’	Storage spaces, retail, ghost kitchens, dance clubs, recording studios, farmer’s markets (above-grade), car-share spaces, car-wash business, bike parking and bike share	Owning a car is a necessity; weak public transport, esp. regional transport; reduced car usage due to work-from-home; ownership of property and cars is the real equity issue; maximums are appropriate; city must have conducted studies on permits & available space	Wishful thinking on part of the city to believe that transport behavior will change; behavior isn’t going to change because of parking availability; autonomous vehicles may also alter the scenario; pandemic-induced movement into the suburbs; living in condos in pandemic	Autonomous vehicles are coming and could change the whole picture; less spaces equals less environmental burden; interesting to see what the future will be for these buildings; weather isn’t conducive to biking all year; EV parking is great policy
Paul De Berardis, Director, (RESCON)	Parking is costly to build and maintain; savings to buyers/renters will be realized due to unbundling effect; even more pronounced in the rental market as opposed to ownership	Potential for car-sharing and renting out parking spaces, but security concerns; space being repurposed for storage possible, but would need ventilation &	Market demand will drive parking supply and access – concerns for peripheral areas not valid because maximums aren’t too low, builders will provide parking according to market demand and aren’t too restricted with this policy change	There’s already a trend of decreasing parking demand – which means less car ownership and usage	The city is mandating adequate Stormwater drainage and this is driving up parking construction costs, especially the deeper down we go

		alterations for human use			
Michael Hain, Program Manager, (City of Toronto)	Parking adds substantially to housing costs whether one buys it or not; in some cases cost savings will be directly passed to buyers/renters, in other cases they would be ‘absorbed by overall project’ and may not be passed	Plan to conduct a study on repurposing unused parking; provide needed visitor parking from unused resident parking; security concerns in renting out parking to non-residents – encourage construction to account for parking rentals, storage and amenity spaces also seem useful; the business case for repurposing spaces in a car-less future; barrier is that	Some parts of the city are auto-oriented and they will need special attention in transit development; removing minimums will have no adverse impact, and the maximums are lenient; maximums vary across three different parking zones based on transit accessibility; city’s growing transit infrastructure will reduce auto-dependence; also investigating on-street parking and restricting parking permits for those who move into new developments	The vision is aimed at the long-term; no expectation for this policy to have a big impact; instead this is a critical step towards creating a sustainable future, and is more about reducing the growth of parking and future problems associated with it; growing infrastructure such as cycling infrastructure will help the transition – increasing/reviewing requirements for bike parking	This policy should not impact demographics in Toronto; parking review that we just finished was really focused on automobile parking - going to be moving on to bicycle parking in next year; EV charging requirements for all parking stalls – EV charging also increases parking construction costs; low-cost marketing and advertising, for example on city subways, bus stop furniture, etc., of the benefits of transitioning from auto-centric transportation to public and active transportation is a great idea; communication

		parking is individually decided			gap between planners, councillors and public
Marcus Gillam, CEO, Gillam Group Inc.	Parking is costly to build and maintain, and even drives units constructed, but unsure if this will reduce price to home buyers/renters	-	Some people could be affected more by changes in parking availability, including adversely	It's popular with developers and makes financial sense; cost reduction at any point in the value chain is great; therefore this can then lead to transport shifts	"single biggest issue we deal with on projects revolves around parking"; Project where developer had to build more parking for a larger rental unit; There'll be fewer MV applications to go above max
Patrycja Jankowski, Senior Advisor, (Metrolinx)	Parking is costly to build and maintain, but developers could absorb cost savings into annual home price increases	Extending underground PATH system in downtown; parking for car-share is a good opportunity	Unlikely that parking less than demand would be built in transit districts	Yes people will shift, and Toronto's evolving public and transit infrastructure will support this shift	The cost of a monthly transit pass is higher than the cost of on-street parking – city should reassess and increase the cost of on-street parking
Elsa Fancello, VP, Castlepoint Numa	Parking is costly to build and maintain, but new policy will not reduce home prices due to other rising costs	-	-	-	-

Table 2 - Summary of unique stakeholder perspectives

Chapter IV - Conclusion

Key takeaways/policy recommendations/suggestions for further study/critical lens

The decision to remove minimums and place maximums instead, as enforced by bylaw amendment 569-2013, was much needed in the context of making sure we don't keep on adding to an already excessive stock of unused parking spaces, and is beneficial and helpful to certain stakeholders such as developers. Is it also beneficial for everyone else, though, in particular to home buyers and renters in Toronto? From the interviews that I conducted, the answer is 'depends on who you ask'. While all stakeholders believed that there will be tangible indirect benefits to everyone, few agreed (and that too, cautiously, and added that it would be possible only in certain contexts) that those benefits could translate directly into lower home prices. The new maximums introduced replace the minimums of yesterday, and as discussed previously, given how many developments were building less parking than the previous minimums, the City Planning Division, as well as development and construction agencies believe that the maximums are fair and will not result in a parking supply deficit.

Immediate and direct impacts of the policy revision in terms of sustainability and lower home prices are questionable, but I believe that it is a step in the right direction towards reducing car dependence in the long run, (albeit a very small step), since removing minimums is critical to achieving the vision for a sustainable, walkable and less car-dependent city in the future – even if it only corrects a previous wrong rather than making radical changes in our current ecosystem. As for its immediate societal benefits though, it is limited to benefitting the sellers (development and construction companies) in a direct sense, and both buyers and sellers in an indirect sense (through its predicted impact on theoretically unbundling certain residential unit sizes, possibly leading to an increase in housing supply, especially in the rental and affordable rental housing market, and by making development construction a little less costly, complex and time-consuming). At the end of the day, sellers are integral parts of the overall value chain and ecosystem that houses Toronto's housing market, and if they benefit at no cost to others, then yes, there is the possibility for those benefits to trickle down to others present in the ecosystem as well; by removing parking minimums and placing maximums, the City has effectively increased the size of the housing net benefits pie, and while most of the increased size may go to the sellers at this time, it is a good first step to laying out a longer-term strategy for tackling Toronto's housing crisis.

It is important to realize however, that it is unlikely to result in any immediate reductions in the final consumer prices of new developments. As the report presented to the City of Toronto by the land economist consulting company states, “Developers typically price housing at the maximum the market will bear, regardless of the costs of construction” (Conway, 2021); the costs of construction (and therefore any reductions in them) are to a degree irrelevant for end-user prices in a low price-elastic market where supply isn’t meeting demand. This to me, is a reflection of the failure of our overall system – where housing has been commodified, and where a multitude of other factors are responsible as well. In our current system and model of housing, there is no way to track these cost savings and somehow enforce or mandate developers to pass them over to home buyers. As mentioned in the land economist’s report, in some areas of Toronto where new housing is emerging and demand isn’t as high as the rest of the city, the market may be able to translate the reduced costs into reduced housing prices, but in general, and given that most of the city is a ‘high-demand’ area, these cost savings will simply be absorbed into developers’ profits. In the preceding chapter, I mentioned that a follow-up discussion is warranted, but is outside the scope of this paper; this is because from my research findings, I have concluded that changing parking requirements alone will not put a dent in Toronto’s housing affordability crisis. That will require more radical changes, especially in the context of how housing is viewed and conceptualized.

As for adverse impacts, removing minimums at this time should not have adverse repercussions because this is a future-oriented policy and allows developers to build parking after an assessment of demand in the project area. If developers do end up building parking that falls short of demand, Toronto’s plan for expanding public and active transport infrastructure should respond to the gap. And this modal shift is what the City seeks to achieve. With regards to maximums; the new maximums are equal to the previous minimums and are therefore not restrictive. Furthermore, they are location-specific and sensitive to the transit needs and level of car dependence of the each zone that they are implemented in. Zones that are more car dependent/have less public transit options have looser maximums. Michael Hain, Program Manager at the city of Toronto for this policy revision, told me that applications to allow developers to go above the maximums will be allowed at this time. Will the policy change incentivize people to ditch the car and take public and active transportation? Not in the short-term; not remotely. However, it will encourage a shift towards less car dependence, and in the long-term, with more restrictive maximums and an expanding public and active transport network, the vision

for a more sustainable, livable and less car-dependent Toronto may be realized. Some other key takeaways and policy recommendations are:

- The policy change doesn't really result in reduced immediate effects, such as reduced home prices, or transport modal change, however, it is a necessary step for the future in order to reduce the continued construction of existing parking
- Unbundled parking model should be enforced through regulations
- There should be more detailed zoning for maximums enforcement
- We need to investigate how to make it easy and simple to convert existing unsold private parking spaces to car-share and visitor parking
- We need to investigate how to deliver a model of sharing of existing parking supply with tenants in new developments that have reduced parking supply; in order to match parking demand with supply by making it easier to allow renting out of parking spaces
- Better collaboration between developers and condo agencies for renting out parking spaces needs to be encouraged and incentivized
- Bike parking and infrastructure should be put in place of unused car parking spaces

Behaviorally informed planning: learning from the twentieth century

What about our conceptualization of the city and our understanding of what a 'city' looks like and means? Previously, it was shown that existing literature points to the perpetuation of city conceptualization as a car-dependent space, and why that is so (historical background and context). Today, more and more cities are waking up and realizing that minimum parking requirements perpetuate building of excessive parking, which in turn perpetuate and sustain car-dependent infrastructure and lifestyles, and how we view the city (as a car-dependent space). Can this policy decision hope to reverse that? Among the stakeholders that I interviewed, some believed that the policy change will impact peoples' lifestyles and transit choices in the long run. Others were not so sure, and one even called it 'wishful thinking' on part of the city to believe so. But they all did agree that it was a step in the right direction.

But in all my discussions, we reached a consensus on this: that for a cultural change to take place, we need more than just changing parking requirements. And we need to learn from the twentieth century and its approach to cars, in this context. The car culture that exploded into existence in the 1900's was helped in large part by the subsequent rise of intensive TV-commercial marketing by the automotive industry, and this is the focus of the video component of my portfolio. The automotive industry's holistic approach tackling both the demand and the supply sides of the equation – implanting desires and wants in people and society while also employing a large proportion of the region's labor force in producing the product of that desire, and simultaneously dismantling the existing public infrastructure network (Segrave, *Parking Cars in America, 1910-1945: A History*, 2012), led to the dramatic rise of the automobile and its infrastructure. To encourage a similarly dramatic shift and change in culture today, we'll need to start rethinking and rephrasing the conversation from 'how can we change transport modal choice in North America today' to 'how can alternative choices such biking and streetcars be presented to people in such a way that they offer similar or better practicality than cars, while also catering to behavioral and societal trends today'.

For example, the idea of freedom is an oft-evoked sentiment in relation to cars. For further background research for this portfolio, I watched car commercials from the 1950's and other periods in the twentieth century, as well as more recent car commercials from the 2000's. I discovered that this concept of freedom – the fact that cars offer freedom – is present in ads from both centuries. Cars have been presented to the consumer to offer more than just a method of moving from point A to point B. They are also intricately tied to the idea of freedom, to cultural norms that were developed in the past century. To encourage a transition in the opposite direction, we'll need to somehow construct those ideas around bikes and public transport, and present them to the mass audience and public at a similarly large scale. Some would argue that we need corporations to do that – since it was corporations that put the car on a pedestal as well, and who were successful in transforming an entire region (North America) that was based around the railway and streetcar, into a car-dependent highway. But I believe that it is high time that planners work collaboratively with politicians and the people – through better communication and messaging (such as for example through posters in the subway and at bus stops, or through YouTube videos – or even videos on platforms that are more popular with younger generations today) that present these transportation alternatives as more than just ways to move from point A

to point B. That combined with real, practical changes to public infrastructure, especially in bike lane safety and subway extension, can bring about real change, that may be slow and gradual at first, but picks up like the car's twentieth century success.

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