

COMPLETE STREETS IN THE 15 MINUTE CITY

FEBRUARY 2021

In February 2021, Elysia DeSandoli, an intern at The Centre for Active Transportation (TCAT) wrote this report to better understand the reciprocal nature of the urban planning concepts of Complete Streets and the 15 Minute City.

Clean Air Partnership (CAP) is charitable environmental organization that enables communities to improve air quality, advance active transportation, and take bold climate action. The Centre for Active Transportation (TCAT), a project of CAP, advances knowledge and evidence to build support for safe and inclusive streets for walking and cycling. Complete Streets for Canada is an online portal developed by TCAT featuring national best practice on streets redesigned to benefit pedestrians and cyclists and providing research, policy and design guidance for Canadian municipalities.

For more information:

www.completestreetsforcanada.ca

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Cover image source: The Centre for Active Transportation



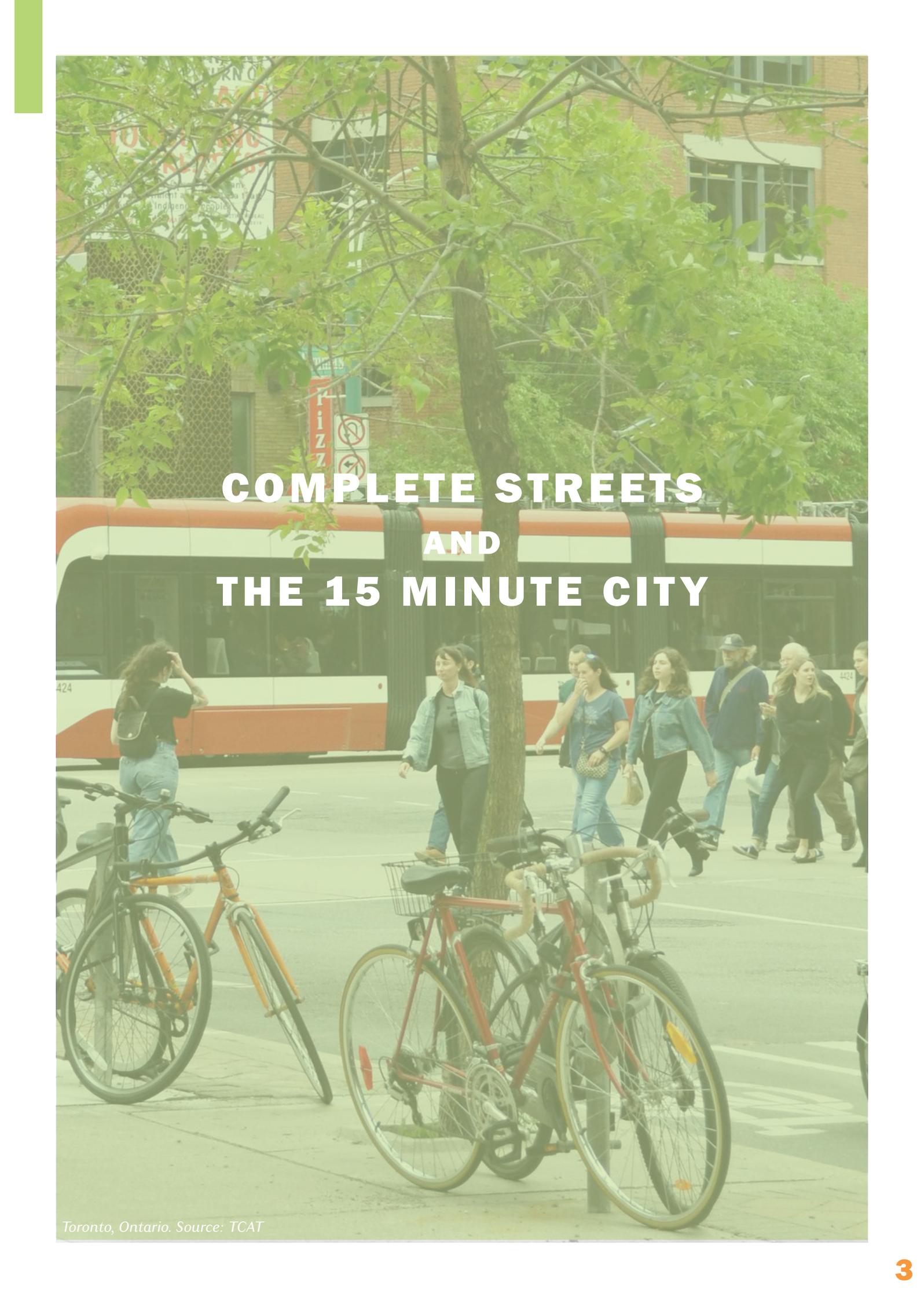
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COMPLETE STREETS AND THE 15 MINUTE CITY

Toronto, Ontario. Source: TCAT

After decades of automobile-centric planning, recently cities have begun to reimagine and redesign their streets to be safer and more inviting for everyone, not just thoroughfares for cars. In articulating this more human-centric vision for cities, several different approaches have emerged that coalesce around similar goals: streets that are safer, more inviting, more accessible, and healthier for pedestrians and cyclists. Since 2010, The Centre for Active Transportation (TCAT) has championed Complete Streets as streets that are safe for everyone: people who walk, bicycle, take transit, or drive, and people of all ages and abilities.

The idea of the 15 Minute City is the latest urban trend becoming increasingly popular in cities around the globe. To be clear, the 15 Minute City is not itself a new type of city, like the popular garden city movement in the early 20th century or the development of the suburbs in the 1940's and 1950's. Rather, the 15 Minute City is a collection of concepts already familiar in the urban planning realm packaged under an overarching idea of high density, mixed use, and walkable neighbourhoods.

In the wake of the COVID-19 pandemic these ideas have increasingly shown their value. With global lockdowns, many urban citizens are now confined to their homes in ways that have almost completely upended daily travel habits. Walking and cycling

offer safe, healthy, and sometimes sociable options for travel when many fear the crowds of public transit and are unable to gather socially indoors.

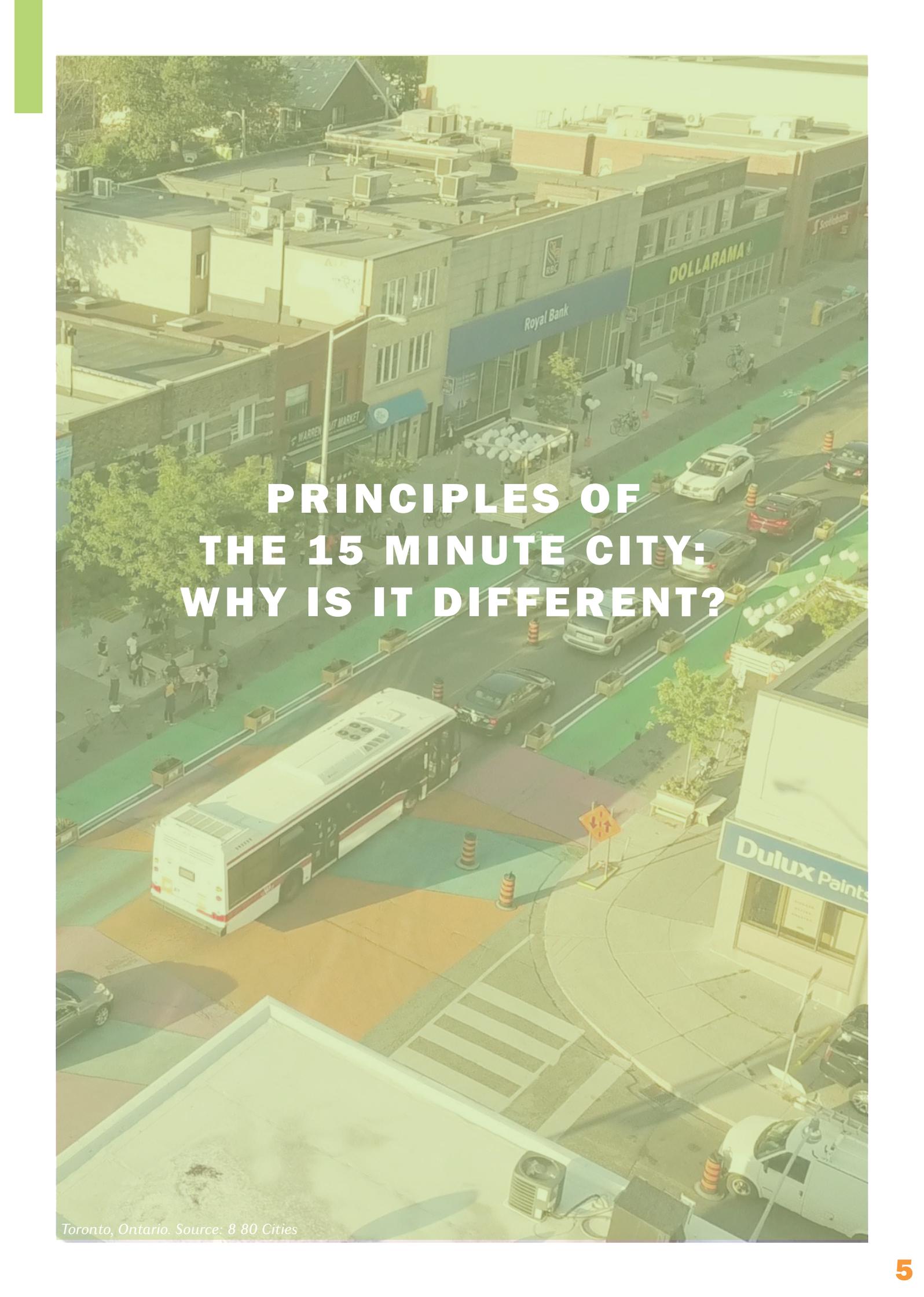
Congruently, municipalities are now looking to develop infrastructure that would support active modes of travel more suited to shorter trips around one's neighbourhood. Along with bike infrastructure, this also includes developing smaller, more self-sufficient neighbourhoods throughout the city. This is where the 15 Minute City enters .

This report intends to demonstrate the benefits of the concept of the 15 Minute City, and how the concept of Complete Streets is an effective and necessary strategy for achieving the 15 Minute City. Where the 15 Minute City offers a strategy to create interesting places to go, Complete Streets provide policy and design tools to ensure that the streets to get there are safe and comfortable.

In essence, streets that are safe, inviting, and accessible to walking and cycling (core concepts behind Complete Streets) are a necessity for the success of the idea of decentralized, diverse, and vibrant neighbourhoods that offer multiple needs to its residents close to their homes. The relationship between the two is symbiotic: one needs the other to succeed.



Figure 1: Hallmarks of a 20-Minute Neighbourhood, another term for the 15 Minute City Concept. Source: Victoria State Government

An aerial photograph of a city street in Toronto, Ontario, illustrating the concept of a 15-minute city. The street is wide and features a dedicated bus lane with a white bus. There are also car lanes, a green-painted bicycle lane, and a pedestrian walkway. Buildings along the street include Royal Bank, Dollarama, and Dulux Paints. The scene is set during the day with clear shadows and a bright sky.

PRINCIPLES OF THE 15 MINUTE CITY: WHY IS IT DIFFERENT?

Toronto, Ontario. Source: 8 80 Cities

WHY IS IT DIFFERENT?

The idea of the 15 Minute City is fairly simple: residents should be able to access their basic needs of food, healthcare, work, green space, etc. within a 15-minute commute from their home. Commuting here refers to walking or cycling; cars are largely absent from this discussion. The most prominent advocate of this concept is Mayor of Paris Anne Hidalgo and her advisor, Carlos Moreno. According to Moreno, our six basic social functions of “living, working, supplying, caring, learning, and enjoying” should be met closer to home to ensure happier citizens are more engaged in the well-being of their communities.¹

C40, an international coalition of 97 cities dedicated to creating more sustainable urban lifestyles, outlines four core principles of a 15 Minute City:

- 1 Residents of every neighbourhood have easy access to goods and services, particularly groceries, fresh food and healthcare
- 2 Every neighbourhood has a variety of housing types, of different sizes and levels of affordability, to accommodate many types of households and enable more people to live closer to where they work
- 3 Residents of every neighbourhood are able to breathe clean air, free of harmful air pollutants and there are green spaces for everyone to enjoy
- 4 More people can work close to home or remotely, thanks to the presence of smaller-scale offices, retail, and hospitality, and co-working spaces⁵

While the term 15 Minute City is relatively new to the urban planning scene, its concepts are not. They have been referred to as ‘complete communities’ or ‘the 20 minute neighbourhood’ in the past, and represent a trend of decentralizing urban life so that neighbourhoods may meet multiple daily needs. Many cities already have these elements ingrained in their urban fabric.

After systematically reviewing 271 studies on the quality of the built environment and its value, Camora (2019) found that qualities such as greenness in the built environment, walkability and bikeability, low levels of traffic, a mix of land uses, more compact neighbourhoods, and convenient connections to a good public transport network have a very strong positive association with the health, social, environmental, and economic value of a place.² Of all variables determined to bring ‘quality’ to a place, these are the most tangible and objective and thus measurable qualities.

Camora describes four core components of the 15 Minute City: transportation, density, diversity, and proximity. Due to their tangibility and objectivity, and thus measurability, these qualities are some of the most straightforward strategies to include in urban policy, thus being able to concretely improve the quality of a place through future design governance.³

Active transportation plays a large part in this idea. Reducing the time spent traveling to basic amenities, through the development of walking and cycling infrastructure, has the potential to reduce car pollution and free up more time for other activities.⁴ While the 15 minutes in the 15 Minute City is generally understood to represent walking and cycling travel time, the core principles lack the detail explaining how cities can successfully transition their neighbourhoods into those that are attractive and safe for pedestrians and cyclists, if they are not already.

Taken together with Complete Streets, the 15 Minute City can fill these gaps and become a more wholistic and multidisciplinary strategy.

neighborhoods' where these uses can coexist in the most accessible, and diverse way. See Figure 2 below for an example of a Paris street redesign.

In essence, these elements should be accessible all within a 15 minute walk or bike ride from one's home. This encourages what some experts call 'micro-mobility' or 'hyper-proximity'. The hope here is to reimagine cities not as distinct zones for living, working, or leisure, but as 'mosaics of



Figure 2: An example of Paris' street redesign for the 15 Minute City vision. Headlines read: 1) An intersection transformed into a neighbourhood square. 2) A space for togetherness for the neighbourhood. 3) Games for children. 4) A garden to share. 5) Freshness and renewable energy. Source: Paris en Commun



THE 15 MINUTE CITY IN CANADA: OTTAWA

The City of Ottawa is one of the first Canadian cities to explicitly include the 15 Minute City in their planning documents. In their new Official Plan for 2021, Ottawa has proposed five overarching policy changes entitled the ‘Five Big Moves.’⁶ Within these, the 15 Minute City is mentioned under policies relating to overall growth management focused on intensification, growth management strategies in the context of greenhouse gas emission reduction targets, urban and community design, and climate, energy, and public health. Looking at Ottawa’s context is a useful case study to better understand the concepts of the 15 Minute City within a North American context.

Similar to the direction of cities like Paris, Ottawa emphasizes integrating ideas from the 15 Minute City into established communities, thereby bringing these concepts into the evolution of pre-existing neighbourhoods. A successful 15 Minute neighbourhood would ideally consist of “...a diverse mix of land uses, including a range of housing, shops, services, local access to food, schools, employment, parks, greenspaces and pathways.”⁷ Therefore, “planning for intensification must therefore also consider the availability of these services and amenities in order to be successful.”⁸

However, developing new neighbourhoods and communities from scratch has the most potential to successfully utilize concepts of the 15 Minute City. Ottawa understands this, as they emphasize the importance of designing, from the ground-up, neighbourhoods as complete, 15-minute communities to “allow suburban communities to be more complete from the onset” without having to later return to car-centric suburbs for retrofitting.⁹ Not only will this encourage higher intensification of uses, thereby creating more diverse neighbourhoods, but this also has the potential to create healthy transportation habits in its residents.

Ottawa includes this strategy in their policy document, stating that “walkable, 15-minute neighbourhoods will help reduce car dependency,

promotesocialandphysicalhealth,andustainable communities.”¹⁰ To accomplish this, the City recommends “ensuring that housing is close to local shops and services, with a street and pathway network that facilitates active transportation and discourages the local car trips, [to] promote the health, sustainability and economic vibrancy of communities.”¹¹ This, along with “appealing urban design and aesthetics”, ultimately contributes to successful walkable communities that have the power to “foster social connections and mental health, reduce injuries and chronic diseases, and make them more resilient to climate change. It will make healthy choices easier choices.”¹²

Additionally, in one document supporting its newest Official Plan, Ottawa notes how focusing growth management on intensification—in the form of 15-minute neighbourhoods—supports “a strategy of distance reduction for the daily needs of Ottawa’s future population.”¹³ The need to travel, and the distance needed to travel, are “the two most direct sources of individual ownership and use of private vehicles.”¹⁴

Successful attempts to reduce private vehicle use should not only target reducing spaces for cars; increasing alternative options for transportation—and the street environments in which they take place—also has the potential for success. As such, Ottawa states that “focusing urban growth on the creation or consolidation of 15-minute neighbourhoods is a fundamental strategy to structurally alter existing patterns.”¹⁵

Incorporating elements of the 15 Minute City is likely to be a seamless addition to the city’s active transportation planning given Ottawa’s current active transportation guidelines and policies. Most recent is the 2019 *Designing Neighbourhood Collector Streets*, a comprehensive policy guidance document with a “‘Complete Streets’ focus”.¹⁶ Interestingly, one of the principles guiding the design of Neighbourhood Collector Streets is compactness, wherein “The right-of-way width and distance between opposing building faces are minimized to help

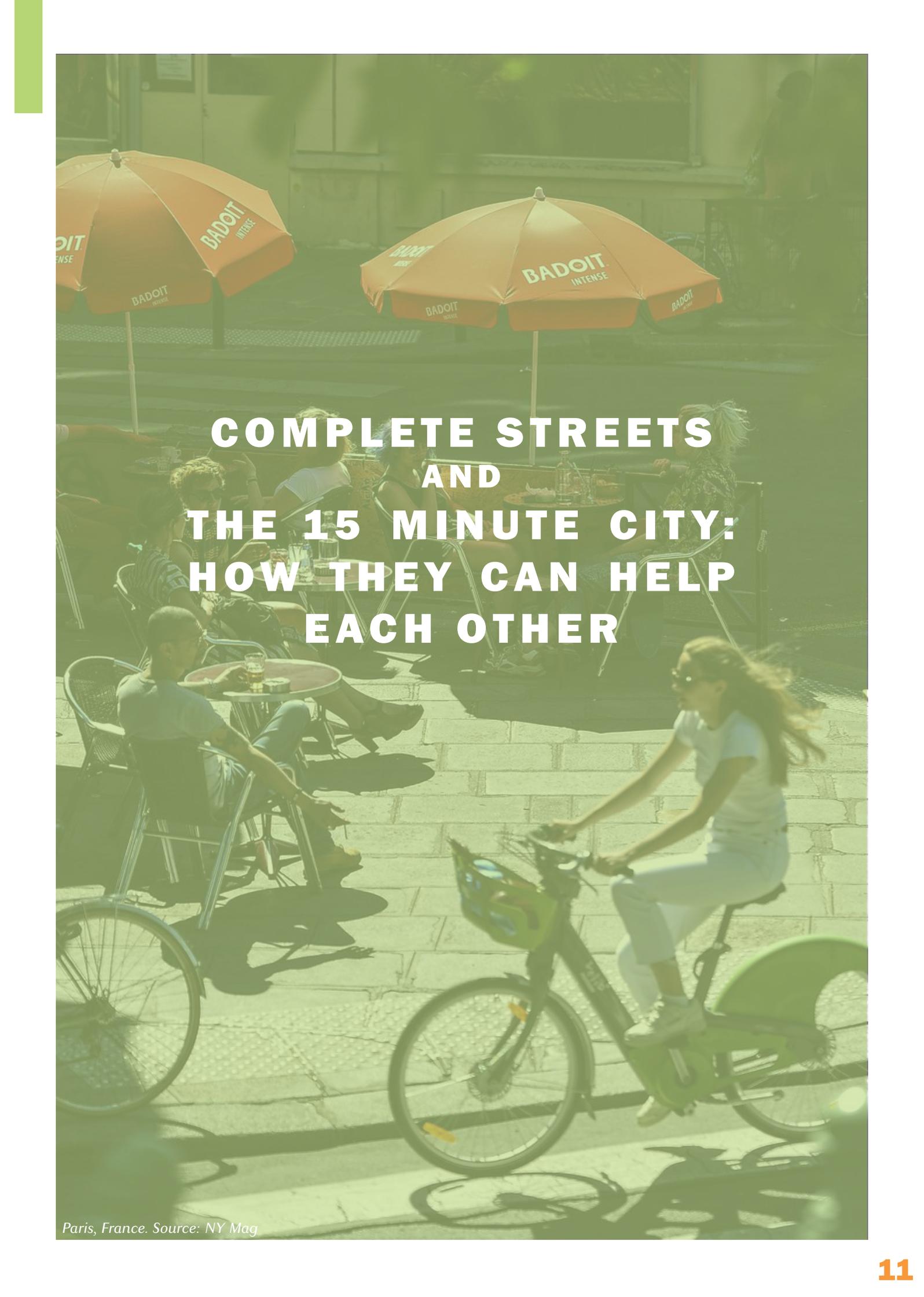
foster a sense of safety and community”.¹⁷ The *Multi-Modal Level of Service (MMLOS)* Guidelines provide guidance to practitioners (City staff, consultants, etc.) on how to assess the various LOS for different modes of transportation and the specific target service levels of each mode given the location and context of a transportation project.¹⁸ These guidelines are a helpful tool in evaluating the performance level of not just vehicular traffic but also that of cycling, walking, and transit.

Section 7.1 of Ottawa’s *Transportation Master Plan*, entitled “Design and Build Complete Streets”, touches on the role of Ottawa’s street as “fundamentally important public spaces”

as well as outlining their vital role in the transportation system.¹⁹ Within this plan are guidelines to adopt a Complete Streets policy for road design, operation, and maintenance; to update road design principles, standards and processes; and to use multimodal LOS to assess road designs and allocate right of way.²⁰

These policies, which acknowledge the role of the transportation network in developing compact neighbourhoods that encourage active transportation, provide a strong framework on which Ottawa’s 15 Minute City can be built.





**COMPLETE STREETS
AND
THE 15 MINUTE CITY:
HOW THEY CAN HELP
EACH OTHER**

Paris, France. Source: NY Mag

INFRASTRUCTURE: SAFETY

Complete Streets is a planning concept that emerged in municipal and provincial government planning around 2009. The goal of Complete Streets is to redesign the street for all road users, thereby including pedestrians and cyclists into a conversation that has long been dominated by vehicle drivers. This can take the form of bike lanes, wider sidewalks, increased street greenery, and more.

Complete Streets, as an urban planning concept, is a complementary approach to building the 15 Minute City. In essence, the 15 Minute City is an effort to enable everyone to be within a 15 minute walk or bicycle ride from their everyday needs. To do so, there needs to be attractive, safe, and accessible infrastructure to encourage more walking and cycling. This is where the concept of Complete Streets enters.

Ontario's provincial growth plan *A Place to Grow: Growth Plan for the Greater Golden Horseshoe* includes Complete Streets under section 3 "Infrastructure to support growth", stating that "In the design, refurbishment, or reconstruction of the existing and planned street network, a *complete streets approach will be adopted that ensures the needs and safety of all road users are considered and appropriately accommodated.*"²¹

One of the main benefits of Complete Streets infrastructure is added safety for all road users. Through the use of street design, Complete Streets strategies are able to reduce traffic-related deaths and injuries. In *Complete Street Transformations in the Greater Golden Horseshoe Region*, nine projects were assessed where streets had been redesigned to make space for pedestrians, cyclists and/or transit users.²² Compiling evidence from before and after changes were made to each street, the authors concluded that the Complete Street redesigns were primarily successful in achieving the goals of increasing the numbers of people cycling and walking, and improving safety.²³

In an assessment of 37 Complete Streets projects across the United States, Smart Growth America found that "the majority of roads with Complete Streets features had fewer collisions and fewer injuries after their retrofits than before" with around 70% of project areas experiencing a reduction in collisions and around 56% experiencing a reduction in injuries.²⁴ For example, the Seattle Department of Transportation implemented Complete Streets infrastructure—reducing number of travel lanes from four to two, adding a centre turn lane, bike lanes, and new crosswalks—that saw a 75% percent decrease in speeding drivers and an 80% decrease in pedestrian-vehicle collisions along one street, and speeding falling by two-thirds with a 23% decrease in total collisions along another.²⁵

Quality of infrastructure also matters for there to be lasting and impactful change. For instance, bike lanes come with a wide range of options that differ vastly in terms of safety and perceived comfort; a painted bike lane along a busy corridor will not have the same impact as a lane separated by a green median. The City of Vancouver is one such municipality that has introduced a series of design guidelines for cycling routes that optimize safety and comfort.²⁶

Most recently, Winters et al. (2020) groups these options into the Canadian Bikeway Comfort and Safety (Can-BICS) classification system.²⁷ Three tiers of classification are introduced: high-comfort, medium-comfort, and low-comfort bikeways. High-comfort bikeways can take the form of bike lanes completely separate from vehicle traffic, while low-comfort bikeways are commonly painted lanes along a vehicle road.²⁸ The introduction of Can-BICS, and other classification systems, is important in that it provides a standard nomenclature with which "comparisons of the availability and infrastructure types across settings and over time" can be made.²⁹ This has the potential to help standardize and objectify the assessment process for Complete Streets.

Cities with vague commitments to bicycle and pedestrian safety need this level of detail and specification in order to ensure their developments meet the standards of comfort and safety described by this classification

system. Cities may implement Complete Streets strategies in tandem with an overarching plan for a 15 Minute City in order to bring detailed elements of safety to their strategy.

INFRASTRUCTURE: NEIGHBOURHOOD CONTEXT

Creating spaces for pedestrian and cycling activity is vital for fostering walkability and micro-mobility integral to the success of dense communities. In order to ensure everyday amenities are within a 15 minute walk or bike ride of one's home, there needs to be the right infrastructure to enable those commutes.

taking public transit offer different catchment areas ranging from one to two kilometers, five to seven kilometres, or ten to fifteen kilometres, respectively (see Figure 3 for a visual example).³² Implementing Complete Streets designs into these catchment areas can help support the goals of the 15 Minute City in lasting ways.

Complete Streets infrastructure thus supports the vision for 15 Minute Cities; these must coexist for them both to succeed. Indeed, the success of communities with 'hyper proximity' is not solely about an increase in urban density, but also about being multimodal and having the quality of the infrastructure available for these short walking and cycling trips.³⁰

Simply implementing kilometres of cycling infrastructure or widening sidewalks is not enough to increase rates of these modes. Yes, they will likely see some increased rates of walking and cycling due to the more attractive street designs. However, if there are no destinations along these routes then they will be unlikely to attract users who were not walking or cycling along them before.

The 15 Minute City is essentially about active modes of transportation and "increasing an area's catchment of accessibility."³¹ Walking, cycling, or

Figure 3 below demonstrates how the density (or lack thereof) of services within a 15 minute catchment area makes the 15 Minute

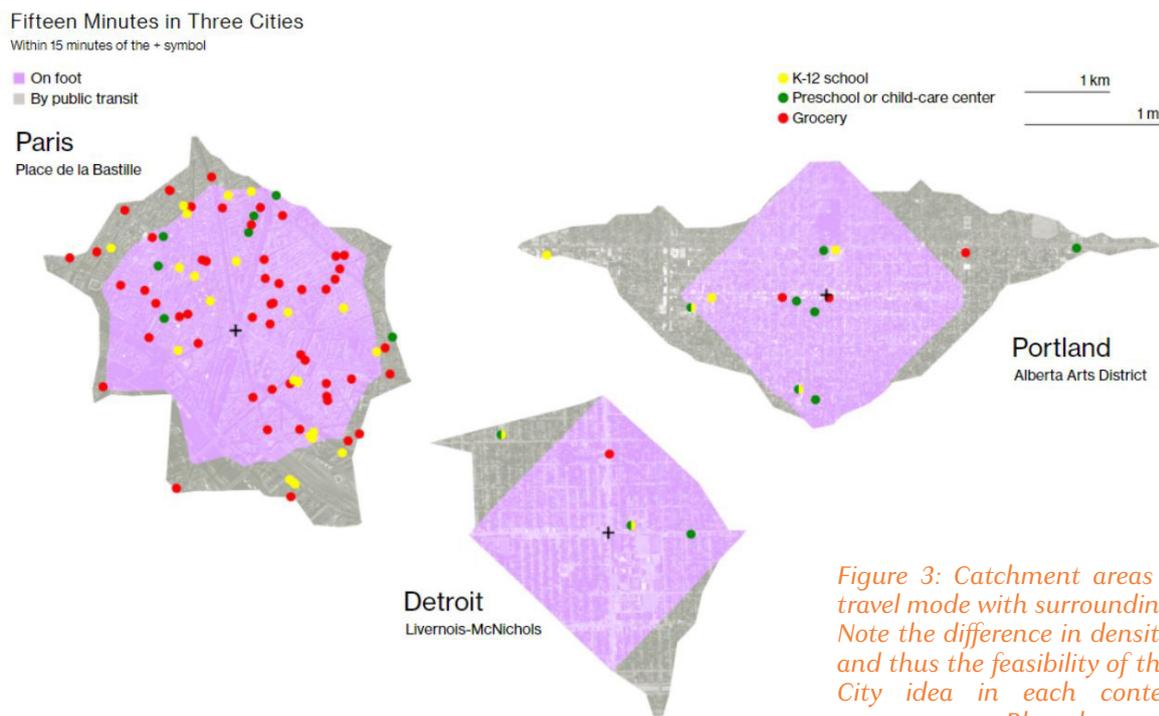


Figure 3: Catchment areas differing by travel mode with surrounding amenities. Note the difference in density of services and thus the feasibility of the 15 Minute City idea in each context. Source: Bloomberg

City concept appear more or less attainable in certain communities. The streets within that catchment area may be 'complete' in that they have been designed for the safety of multiple road users, yet they may be underused due to a lack of nearby destinations.

This is a common critique of many Complete Streets policies; that they do not consider the wider urban context in which these streets lie. Hui et al. (2017) argue that the objectives of a Complete Street "extend beyond the provision of safe transportation facilities for all users" and go on to suggest an alternative definition in which "the functionality of a street is dependent on the fulfilment of at least three competing demands: movement, environment, and place."³³ Here, movement refers to the mechanism of the street that facilitates travel, environment is the aspect of street design that addresses a street's environmental impact, and place is that which

considers the street as a destination, referring to "the ability of a street to support non-travel activities on or adjacent to the street, such as recreation."³⁴ Most Complete Street policies mainly address the demand of 'movement', with secondary attention paid to 'environment' and 'place'. The 15 Minute City attempts to fill the gap of a need for placemaking within Complete Streets policies.

Indeed, "designing a complete street to fulfil the place function requires understanding the relationships between the street and the buildings and spaces that frame it."³⁵ Ensuring a rich diversity and density of services (The 15 Minute City) around streets designed for safe active travel (Complete Streets) is a strategy allowing for both planning concepts to support each other. Creating these in tandem is thus a necessary step in creating truly complete streets.

LIVABILITY AND SOCIABILITY

COMPLETE STREETS: WALKABILITY

By accounting for road users beyond private vehicles, the concepts of Complete Streets and the 15 Minute City promote an urban street life that is more attractive, and thus more livable for everyday people. Human-scale design treatments such as street furniture, trees and wide pedestrian rights-of-way animate the public realm and encourage people to linger in neighbourhoods and on the street.³⁶ By way of these urban design policies, Complete Streets help provide more opportunities to form networks and interactions that inspire trust and reciprocity, otherwise known as social capital.³⁷

Sociologist Ray Oldenburg, in his seminal work on 'third places', notes how nearby accessibility of services helps foster social capital:³⁸

"In using nearby facilities, in visiting them afoot and regularly, the residents of an area effectively create a casual social environment and reap its benefits. The pedestrian mode of transportation

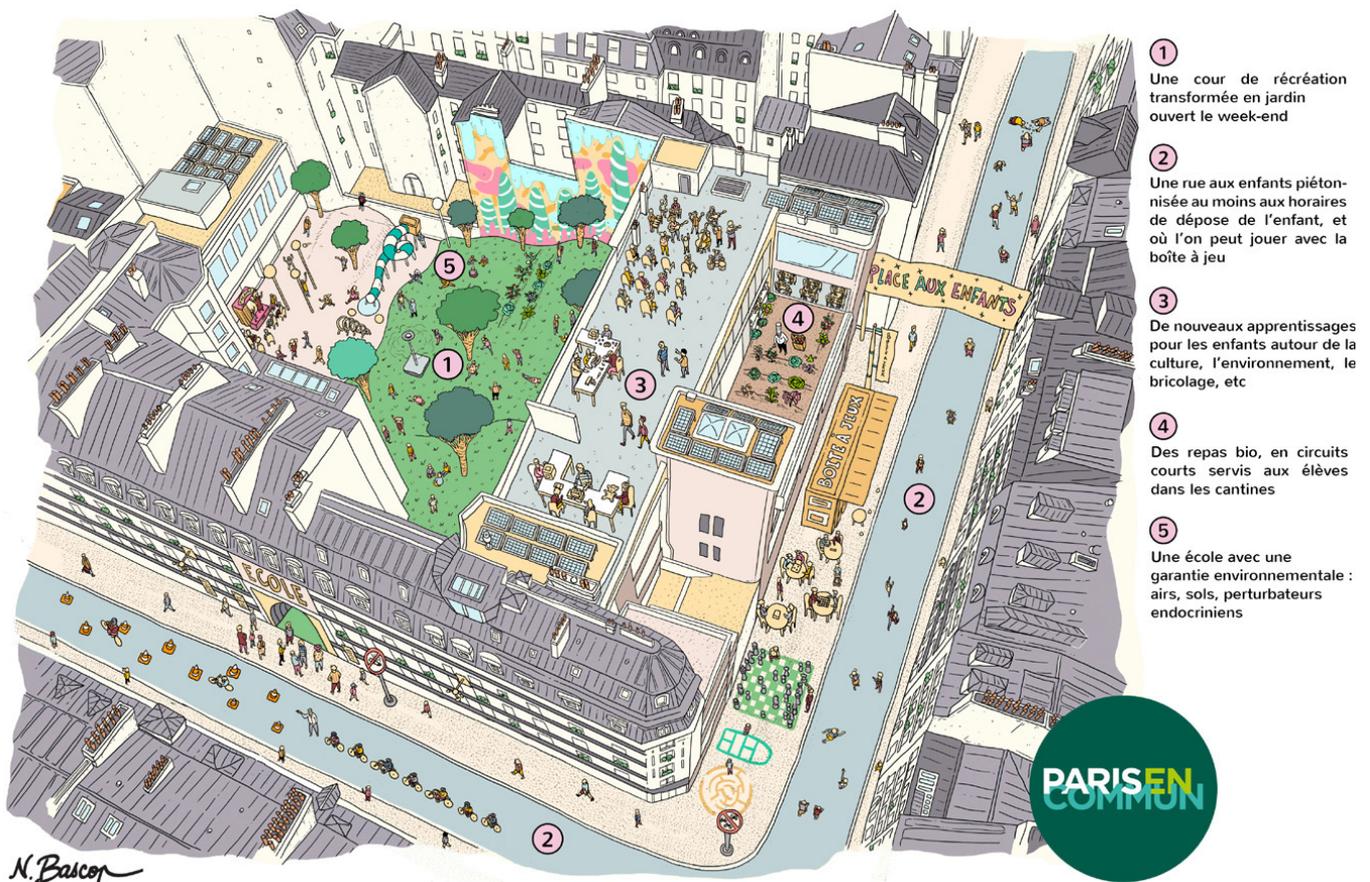
invites human contact that automobile transportation precludes. People get to know their merchants and their neighbors; from among the many, the compatible few are able to discover one another." (Oldenburg, 1989, p.267)

Research conducted since Oldenburg's work in 1989 have proven what he theorized: highly walkable, mixed-use neighbourhoods are better generators of social capital than car-dependent neighbourhoods.³⁹ Neighbourhoods with good walkability have been proven to increase the number of social interactions between residents, with elements like the density of a neighbourhood and accessibility to a variety of social and recreational facilities influencing the quality of these interactions.⁴⁰ Similarly, those who take more leisurely walks in their neighbourhood tend to have higher quality social interactions.⁴¹ Simply put, the more walkable a neighbourhood, the easier it is to casually bump into one's neighbours

and to engage in conversation. It is exactly the casual nature of these interactions that is so important in fostering social capital. They breed a sense of familiarity and predictability many find comforting, and over time “have been theorized to be of great importance for fostering ‘a web of public respect and trust, and a resource in time of personal or neighborhood need.’”⁴²

It is more likely in walkable neighbourhoods for these casual encounters to occur rather than in car-dependent environments where social interaction mostly occurs by invitation, not chance. This is due to the design of many suburban communities: life has been built to occur in the home, the private backyard, and in the private vehicle. The lack of diversity of uses within car-dependent communities also

contributes to this social isolation, wherein opportunities for chance and casual social interaction do not exist outside the home. Relegating not only city blocks but entire neighbourhoods to a single function (residential) effectively ensures that “the privatization of life is no longer optional but spatially enforced.”⁴³ Figure 4 below demonstrates an ideal redesign of a Paris neighbourhood with examples of spaces taking on multiple uses throughout the day and week, such as an inner courtyard now open to the public on the weekend. Integrating Complete Streets concepts—wide, attractive sidewalks, well-defined bike routes, and designing streets with pedestrians in mind—into revitalization efforts or in the design of new neighbourhoods could positively impact the livability and social cohesion found in those communities.⁴⁴



- 1 Une cour de récréation transformée en jardin ouvert le week-end
- 2 Une rue aux enfants piétonnisée au moins aux horaires de dépose de l'enfant, et où l'on peut jouer avec la boîte à jeu
- 3 De nouveaux apprentissages pour les enfants autour de la culture, l'environnement, le bricolage, etc
- 4 Des repas bio, en circuits courts servis aux élèves dans les cantines
- 5 Une école avec une garantie environnementale : airs, sols, perturbateurs endocriniens

Figure 4: An example of Paris’ street redesign for the 15 Minute City vision. Headlines read: 1) A courtyard transformed into a garden open on the weekend. 2) A street for children pedestrianized at least during children’s pick up and drop off times, where you can play with the playground. 3) New learning for children about culture, the environment, crafts, etc. 4) Locally grown organic meals served to students in cafeterias. 5) A school with an environmental guarantee: air, soil, endocrine disruptors. Source: Paris en Commun

THE 15 MINUTE CITY: DENSITY AND DIVERSITY

Dense, mixed-use neighbourhoods have the potential to positively impact people's sense of livability and satisfaction. High density neighbourhoods have been shown to have a positive association with neighbourhood satisfaction, as densely populated areas offer easy access to amenities, public transportation, and other areas of the city.⁴⁵

Past research has found that high accessibility has a positive effect on livability, and that high density should be accompanied by other important elements such as access to wider urban networks, safety, the existence of urban greenery, and access to public gathering places in order to increase livability.⁴⁶ In a study conducted in Oslo, Norway, Mouratidis (2018) found that "neighbourhood satisfaction appears to be higher in compact areas" than in those characterized by sprawl.⁴⁷ Van den Berg et al. (2017) found that in the Netherlands, neighbourhoods that allowed for more walking and cycling saw a higher number of important social interactions reported by its residents when compared with rural areas.⁴⁸

It is worth noting that European examples like Oslo, the Netherlands, and Paris, as previously

mentioned, benefit from an urban form that emerged prior to the dominance of the private vehicle. As such, many European cities are already predisposed to the dense and pedestrian-friendly lifestyle that meets the requirements of the 15 Minute City. Nevertheless these examples remain useful for North American cities as they demonstrate the benefits of this type of urban form. North American planners and policy makers may draw upon these case studies when designing or revitalizing their own communities.

A current example of this process already underway is in the Golden Mile in Scarborough, a suburban district in Toronto. A proposal for this area seeks to transform the current landscape of surface parking lots and big box stores into a mixed-use community with a new, pedestrian-friendly street grid.⁴⁹ Increasing the quality of social life is an important strategy in the context of COVID-19, where people are more isolated than ever. Where the opportunity for socialization is severely limited for those cities still tackling the coronavirus, enabling social interaction at the local level through urban design and policy may help to improve the mental health of its citizens in a post-coronavirus world.

INCREASED ECONOMIC ACTIVITY

Complete Streets and the 15 Minute City have the potential to increase the livability of a neighbourhood—and by extension the city. They also have the potential to increase economic vitality within and adjacent to a revitalized neighbourhood.

Dario Hidalgo, senior mobility researcher for World Resource Institute's Ross Center for Sustainable Cities, recently stated that increased walking and cycling have the potential for "small businesses in [a] neighbourhood to thrive."⁵⁰ Neighbourhoods with the infrastructure to support walking and cycling activity provide the opportunity for a

given community to become connected to a wider network beyond one's immediate area through the use of interconnected bike lanes, longer distances of walkable streets, and so on. This has shown to match the attractiveness of an area, wherein properties located on accessible roads, or those in well-connected neighbourhoods, are more highly valued than their less connected counterparts.^{51,52,53}

Camora (2019), in his review of 271 studies on place value, found that almost 100 of the studies reviewed presented evidence to the fact that areas with high place value—attributed to

factors like urban greenery, open space provision, and qualities of the built environment such as walkability, connectivity, and so forth—created strong private as well as public economic benefits.⁵⁴ He states that this evidence is “overwhelming” with “remarkable confluence in the research, with very little conflicting evidence.”⁵⁵ How places are shaped can effectively deliver rising property values in the residential, retail, and office sector, reduced vacancies in the retail and office sector, viable investments and extended regeneration benefits, reduced public expenditures, higher local tax take, lower costs of living, and higher productivity.⁵⁶

Implementing Complete Streets projects can also cause employment and sales levels to rise—in some cases, significantly.^{57,58} This may be because residents are more inclined to shop locally when they may easily visit nearby stores on foot or by bike.⁵⁹ In a 2017 study of Bloor Street in Toronto’s Annex and Koreatown neighbourhoods, The Centre for Active Transportation (TCAT) found that, after the implementation of a new protected bike lane, the number of customers and spending increased for businesses, with customers arriving on foot or by bike reporting higher levels of spending than those arriving by car or public

transit (see Figure 5).⁶⁰ This can be attributed to the fact that “people on bikes, like people on foot, are mostly locally-based, and as a result they tended to visit more frequently and spend more per month than drivers or transit users.”⁶¹

In essence, “spending was related to proximity,” wherein “visiting more results in more spending, and locally-based visitors were 2.6 times more likely to spend at least \$100 per month.”⁶² Behind this positive economic change was the bike lane itself; the new infrastructure encouraged more people to walk or cycle to their destination, with cycling rates tripling from 7% to 20% and walking rates remaining the most popular mode at 48% along Bloor Street.^{63,64}

This same phenomenon has been demonstrated in the United States as well. In one case, when a bike lane was added along a street in San Francisco, nearby businesses saw sales increase by 60%, which merchants attributed to increased pedestrian and bicycle activity.⁶⁵ In another example in New York City, implementing a protected bike lane saw an increase in local retail sales of up to 49% along the same street.⁶⁶

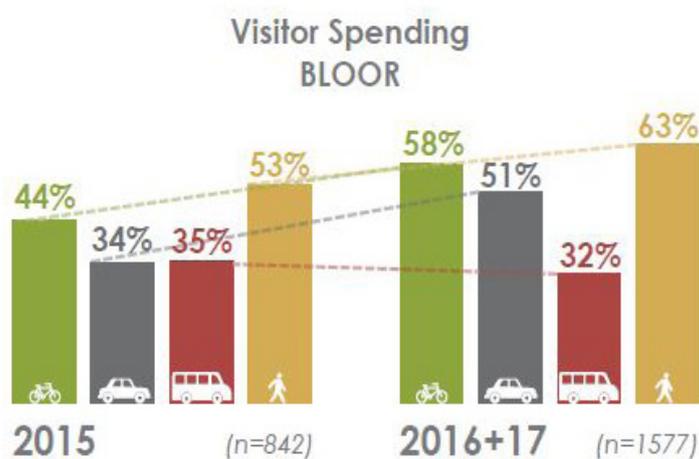


Figure 5: Changes in the Percentage of Visitors Spending \$100 or More, by Travel Choice on Bloor and Danforth. Source: Smith Lea et al. (2017)

Expanding public spaces also has a similar effect.⁶⁷ The expansion of Union Square North in Manhattan saw 49% fewer commercial vacancies (compared to 5% more vacancies borough-wide) in conjunction with a 74% approval rate for the new expansion (see figure 6).⁶⁸ Transforming an underused parking area into a community gathering space saw a 172% increase in local retail sales, compared to 18% borough-wide.⁶⁹ Turning a curbed parking lane into a seating area saw a 14% increase in sales at fronting businesses.⁷⁰ As such, locating businesses on easily accessible streets can be a concrete strategy for increasing economic success.

Additionally, communities reported increased net new businesses after Complete Streets improvements. The case study of Edgewater Drive in Orlando, Florida showed that Complete Streets improvements of bicycle lanes, wider on-street

parking, and a center turn lane made the streets safer for both pedestrians and drivers, in turn making the street a more desirable destination.⁷¹ As a result, 77 net new businesses opened from 2008 to 2015, creating 560 new jobs for the community.⁷²

While this relationship has not been extensively researched, initial findings of positive economic trends along new Complete Streets corridors suggest that “Complete Streets made more desirable places to locate and operate businesses.”⁷³ In order for more businesses to become integrated into new or pre-existing neighbourhoods so as to encourage shorter trips and accessibility around one’s home, it is integral to concurrently implement Complete Streets for this effort to be successful.

In the context of the COVID-19 pandemic, this is especially pressing as many residents’ area of travel has reduced significantly to only the immediate area around their home. Increased anxiety around the safety of crowded public transportation has also made walking and cycling—outdoor modes of travel—more attractive. Capitalizing on this trend, city planners could look to encourage these travel modes in order to benefit the public from multiple angles. Encouraging denser congregations of businesses along the lines of the goals for a 15 Minute City has the potential to benefit both residents and business owners alike.

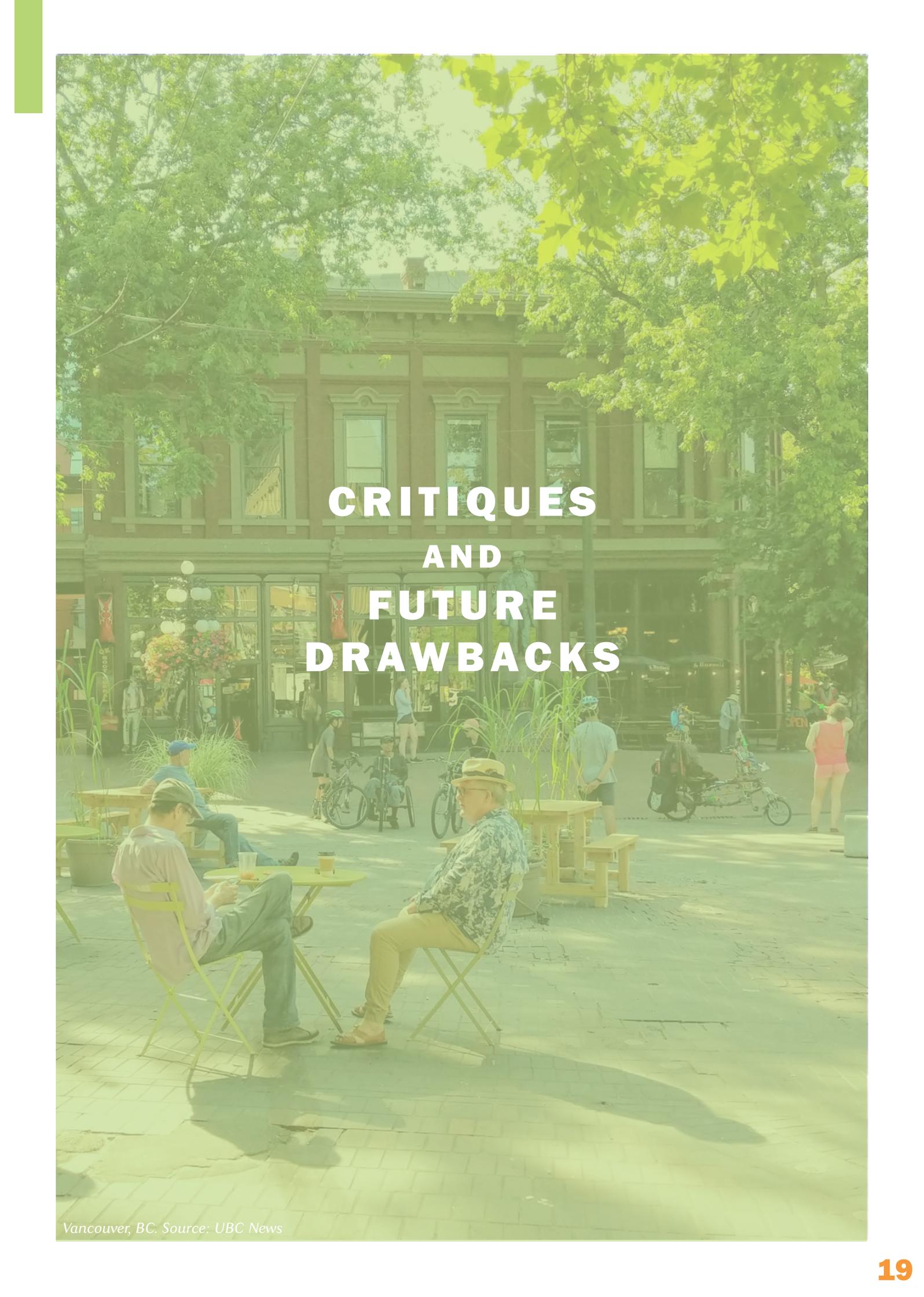


Before,
2009

Figure 6: Union Square North before and after street calming projects, completed by New York Department of Transportation. Source: Google Maps



After,
2013



CRITIQUES AND FUTURE DRAWBACKS

Vancouver, BC. Source: UBC News

IGNORING THE SUBURBS

When speaking of urban density, conversations tend to ignore the suburban environments altogether. Discussions on the 15 Minute City are no exception. Cities that have successfully implemented the 15 Minute City concept, like Barcelona and Paris, exist in Europe where dense urban living has existed as part of the urban fabric for hundreds of years, built in times when walking, cycling, and public transit were the main modes of transportation.

However, when applying this concept to cities in North America or Australia, where the convenience of cars saw a rise in sprawling suburban communities, the basic urban function of density and having amenities within walking distance is far out of reach.

What, then, about those who live in suburban communities but commute to the city's core? The 15 Minute City concept largely ignores suburban commuters, as it mainly advocates for live, work, and play within close range of one's home. Yet not everyone has the possibility of having jobs within 15 minutes.

While COVID-19 has dramatically changed or eradicated the commuting patterns of many workers, many still must attend work in-person. In this case, many low-income workers, who are often the lifeblood of the urban core, can only afford to live in the suburban periphery. As such, the 15 Minute concept will have to reckon with ideas of social equity, especially affordable housing.⁷⁴

Indeed, the idea of reappropriating city roads from vehicular traffic to pedestrian or cycling-only zones possibly creates another issue of diverting congestion to other major roads. This could require further investments in surrounding roads to deal with heavier traffic.⁷⁵

In Barcelona, this emerged as a concern with the development of its Superblocks; there is a possibility traffic may relocate to less desirable areas of the city (see Figure 7 below).⁷⁶ However, while this was brought up as a possible drawback to the Superblock model, there has been no evidence that this has occurred thus far. Nevertheless, supplementary interventions to further discourage private vehicle transport throughout the city may still be necessary if this effect does occur in other cities with heavier vehicle traffic.⁷⁷

SUPERBLOCKS MODEL

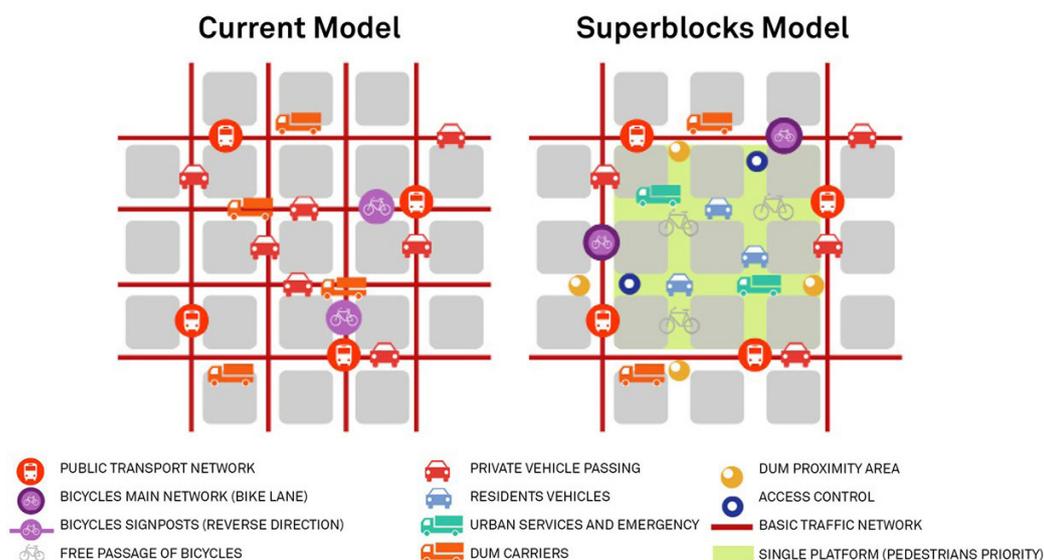


Figure 7: Barcelona's Superblocks, while beneficial for its residents, might possibly reduce viable throughfares and thus worsen traffic for the city's outer residents. Source: Ajuntament de Barcelona

GENTRIFICATION CONCERNS

Whenever a location becomes more desirable, it inevitably leads to an increase in property demand. Measures for sustainability, including access to green space, is one such phenomenon that attracts interest to an area.

In recent years, the effect of green gentrification has increasingly become the subject of study. This is defined as “urban gentrification processes...facilitated in large part by the creation or restoration of an environmental amenity.”⁷⁸ Research has repeatedly found that access to green space is a positive driver of residential property values and strengthens the identity of an area as attractive and desirable to work, live, and visit.⁷⁹ This can reasonably be extended to encompass the effects of building more walkable and livable neighbourhoods.

The inclusion of more pedestrian and cycling spaces can lead to increased property values, potentially influencing gentrification and the displacement of a neighbourhood’s original residents.⁸⁰ In a study conducted in Boston, Diao and Ferreira (2010) found that property values were positively associated with accessibility to transit and jobs, connectivity, and walkability.⁸¹ Households living in neighbourhoods within walking distance of public transit end up paying a higher premium for good accessibility to jobs, good walkability, and good connectivity to the rest of the city.⁸²

This phenomenon has been further proven when looking at the aftereffects of newly implemented Complete Streets projects. In a survey of Complete Streets projects across the United States, eight out of ten projects saw increased property values along corridors with Complete Streets improvements.⁸³ One case study of a main street in Orlando, Florida saw adjacent property values increase by 80% after the construction of Complete Streets infrastructure.⁸⁴

Similarly, a survey of 15 real estate markets in the United States saw increased home values of an additional \$700 to \$3,000 from just a one-point increase in walkability, as measured by WalkScore.com.⁸⁵ Adding cycling infrastructure or street greenery has similarly shown to increase property values of a neighbourhood.⁸⁶

This increase is amplified when walkable neighborhoods are near one another, demonstrating the value of a connected network of Complete Streets.⁸⁷ Gentrification is a potential risk wherein neighbourhoods may become more attractive for upper classes, leading to rising rents and the displacement of its original residents.^{88,89}

However, this is not to say that cities should not invest in Complete Streets infrastructure. Having access to green space within walkable and attractive communities should not only be accessible to the wealthy. In order to keep these features accessible to all income groups, municipal governments should consider developing anti-gentrification policy in tandem with the development of complete communities.

When creating communities from the ground up, building middle or mixed-income housing could potentially help keep neighbourhoods affordable for the middle and low-income households.⁹⁰ Community land trusts, housing vouchers, or low-income housing tax credits are other possibilities in the effort to keep new neighbourhoods affordable.⁹¹ For Toronto, mandatory inclusionary zoning has the potential to help make space for affordable housing in newly built communities.



CONCLUSION: TODAY'S CONTEXT

Following the outbreak of the COVID-19 virus in March 2020, cities around the world are looking for new ways to embrace life and work on a neighbourhood scale.

With more people working from home, many people's travel behaviours have shrunk considerably. Many are now frequenting the stores and services in their immediate neighbourhood, meaning less usage of long-distance travel modes, like public transportation or private vehicle use, and higher rates of walking and cycling.^{92,93}

Some cities have seen "street space previously dedicated to cars is freed up, eliminating pollution and making way for gardens, bike lanes, and sports and leisure facilities."⁹⁴ Building cycling and pedestrian infrastructure is a way for cities to "leverage the moment and reposition [themselves] and focus on a sustainable future."⁹⁵

C40, an international coalition of 97 cities, created a Global Mayors COVID-19 Recovery Task Force. The *Mayors Agenda for a Green and Just Recovery* posited the 15 Minute City as a framework for recovery from COVID-19 wherein cities must "create a regulatory environment that encourages inclusive zoning, mixed-use development and flexible buildings and spaces."⁹⁶

In a world after COVID-19, C40 envisions urban living where "all city residents will have access to resilient, sustainable public services" fostered by all residents living in "'15-minute cities' where shops, workspaces and essential services are easily reached within a short cycle or walk, surrounded by plenty of green spaces where they can relax, exercise and play."⁹⁷

The quality of the 'short cycle or walk', however, is only briefly touched upon in this report. Including Complete Streets in any COVID-19 recovery plans brings the benefit of a detailed lens on the quality of active streets, not only quantity. The presence of nearby amenities and active transportation infrastructure is necessary to ensure this successful transition.

C40 recommends that cities invest in walking and cycling infrastructure to reallocate "road space to cyclists and pedestrians to reap the full rewards of job creation, physical distancing, cleaner air and more."⁹⁸ This can "quickly help to revive high streets and deliver a raft of other benefits for local economies, as well as improvements in air pollution, equity and more."⁹⁹ It is important for this infrastructure to be permanent and ingrained in future urban policy so that these positive elements may be enjoyed by future generations.

While not explicitly mentioning "Complete Streets", these concepts still effectively advocate for the same result: streets safely designed with multiple users, uses, and modes in mind. Crises like the COVID-19 pandemic present the unique opportunity of "rediscovering proximity" in the context of what neighbourhoods can do for their residents.¹⁰⁰

Active transportation plays a large part in this idea. Reducing the time spent traveling to basic amenities, through the development of walking and cycling infrastructure, has the potential to reduce car pollution and free up more time for other activities.¹⁰¹ While the 15 minutes in the 15 Minute City is generally understood to represent walking and cycling travel time, the concept's core principles lack the detail explaining how cities can successfully transition their neighbourhoods into those that are attractive and safe for pedestrians and cyclists, if they are not already. Taken together with Complete Streets, the 15 Minute City can fill these gaps and become a more wholistic and multidisciplinary strategy.

The hope is to reimagine cities not as distinct zones for living, working, or leisure, but as 'mosaics of neighborhoods' where these uses can coexist with the utmost accessibility and diversity.

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