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University of Calgary Press

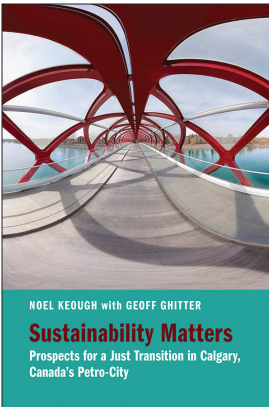
Keough, N., & Ghitter, G. (2021). Sustainability Matters: Prospects for a Just Transition in Calgary, Canada's Petro-City. University of Calgary Press.

<http://hdl.handle.net/1880/113895>

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SUSTAINABILITY MATTERS: PROSPECTS FOR A JUST TRANSITION IN CALGARY, CANADA'S PETRO-CITY

by Noel Keough with Geoff Ghitler

ISBN 978-1-77385-249-2

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Sustainable Mobility: Bikes, Trams, and (Fewer) Automobiles



In most cities, nothing eats up more of the municipal budget than transportation. The movement of goods and people in cities is also one of the largest contributors to greenhouse gas emissions. In this chapter, the essays focus on sustainable alternatives to the automobile-dependent transportation systems entrenched in most of the world's cities. We also tackle the issue of CO₂-intensive air travel. The essays highlight the benefits of rail-based mass transit—in particular, tramlines—and present an overview of cities where rail-based transit thrives.

In this chapter, we introduce the concept of “induced demand” to explain the futility of the road engineers’ conventional recommendation to build our way out of congestion. We put the issue of urban transportation in the context of resilience, arguing that a resilient city is one where rail-based mass transit is the go-to option and the private automobile is optional. We compare the social, economic, and ecological benefits of light rail transit versus tramlines.

We are particularly excited about the possibilities of trams, usually called streetcars in North America. In Calgary, trams were part of our heritage until the 1950s, when the cult of the automobile took hold across North America, streetcar systems were dismantled, and an unprecedented amount of public money was poured into automobile infrastructure in what influential urban planner Brent Toderian calls the “largest and most damaging social engineering experiment in history.”¹ In fact, only very recently did the kilometres of light rail transit (LRT) surpass the historical extent of Calgary’s streetcar network.

In this chapter, we take a look at some of the largest and most successful tram systems in the world today. Some of these, like the one in Melbourne, are long-established and have been modernized; others, like those in Portland and Seattle, are new and thriving. We also present a set of criteria for a good rail-based mass transit system and propose five tramline routes that make sense for Calgary. In the essay “In Praise of the Bicycle,” we argue that this simple device may just hold the key to tackling the climate emergency while enhancing quality of life.

We end the chapter with a stroll through the heart of St. John’s, Newfoundland, in the essay “Everything Old Is New Again.” One of the most picturesque cities in North America, St. John’s also lays claim to being the oldest—and that is the key to lessons it has to offer. St. John’s is a city that was born and matured before the invention of the automobile—and before the advent of the professional planner. It has been designed for humans, not the automobile. Pre-auto cities like St. John’s remind us how to build the urban environment for humans rather than machines.

TRAMS: THE MISSING LINK IN CALGARY'S TRANSPORTATION SYSTEM

Among the stories we tell about ourselves in Calgary is a tale of desperate love—for our cars. Calgarians are having a mass *affaire de coeur* with their four-fendered darlings. Our automotive passions run so deep, we consider life without cars to be utterly inconceivable. It's a story repeated worldwide, from Paris to Portland. Everyone everywhere, apparently, loves their cars above all else. But it's a myth. We know this because wherever high-quality, convenient, and speedy alternatives have been built, people readily abandon their clunkers and take to the rails, to bikes, and to their feet. Some places have actually ripped out highways only to discover they are not missed.

Myths persist because they contain elements of truth. At this point, no comprehensive transit alternatives exist for most Calgarians, and until they do, myth and fact are hard to separate. As it is, our city's system discourages more transit use.

At first glance, Calgary's LRT system, locally referred to as the C-train, seems to be one of the most successful on the continent. In January 2019, for example, Calgarians took 6.96 million trips on the C-train.² Only Guadalajara, Mexico, has more riders.³ This is not an anomaly—Calgary has topped ridership lists for years.⁴ But this success is not because we love our transit system. It is, at least in part, because City policy limits downtown parking but has not made the offsetting investment to increase access and usability for those needing alternatives. Many transit users feel herded to the C-train.

Even if downtown parking were unlimited and cheap, the road network already runs at capacity and there are no plans—and no room—for new expressways into downtown. Imagine if tens of thousands more people drove to the city centre each day. In contrast, what if tens of thousands of additional people had to (or wanted to) use public transportation as their first choice? This scenario was briefly foreshadowed when gas prices spiked in 2008. It was bad. So bad that in the morning rush, people travelling north would first take southbound trains to stations closer to the end of the line, just to get a spot on a northbound train.

Despite its apparent success, our transit system lacks diversity. We've streamlined the city for convenient driving, making more sustainable transit forms difficult to implement effectively. And Calgary isn't alone. Planners everywhere are contending with the same issues and battling the same myths. Many cities have responded by introducing, or reintroducing, the humble tram, also known in North America as the streetcar. All over the world, trams are being recognized as an essential ingredient of resilient urban transit networks.

Why trams? In their ongoing research into the effectiveness of different transportation modes, University of British Columbia planning professor Patrick Condon and his colleagues have concluded that trams have multiple benefits for cities interested in planning for resilience and sustainability.⁵ Because trams and LRT cars are electric, they produce no carbon emissions or smog: they are better than buses for the environment and for our health. Lifetime maintenance and repair costs for trams rank lowest among the public transport alternatives. Although the initial capital investment is higher than for buses, trams have lower lifetime operating costs. Trams have lower capacity than LRT, but many more miles of track can be built for the same cost, because trams don't require special segregated infrastructure—you can step right from the curb onto the tram.

Overall, compared to other transit modes, both trams and LRT are greener, leaner, and cheaper. The key point, however, is that trams, unlike LRT or buses, play a significant role in fostering community and social resilience. Think of Calgary's best streets, such as 9th Avenue SE in Inglewood or 17 Avenue SW in the Beltline, and ask how they got that way. Would it be a surprise to find out that all of them evolved as tram streets? Trams evoke a sense of permanence and confidence in a way that bus routes do not, which in turn encourages social and financial investment along tramlines. Wherever trams have been built, commerce and social vitality have blossomed. Other forms of transit, like buses and LRT, simply can't compete.

Trams also add versatility. During rush hour, they service local commuters, decreasing the load on the rest of the public transport system overloaded with long distance commuters travelling between downtown and the suburbs. During the rest of the day, trams link neighbourhoods and communities in a predictable and trustworthy way, which inspires

confidence and boosts ridership. Trams play a role in a complete transit network that neither LRT nor buses can.

Trams provide new options and ways to think about urban resilience and sustainability. Calgary was a tram city once. It needs to be one again. That's no myth.

LOVING TRANSIT: IF YOU BUILD IT (RIGHT), THEY WILL COME

In 1962 Anthony Downs, formerly a senior fellow at the prestigious Brookings Institution in Washington, DC, wrote an influential book entitled *Stuck in Traffic: Coping with Peak-Hour Traffic Congestion*.⁶ Downs draws on the concept of “induced demand” to explain why building new roads does not relieve traffic congestion. In simple terms, providing more of something can lead to increased consumption. With new roads, this has the counter-intuitive effect of making traffic worse than it was before the roads were built. The 2020 report *Generated Traffic and Induced Travel*, produced by the Victoria Transport Policy Institute, confirms the dynamic of induced demand.⁷

Here's how it works. Building new roads creates what Downs calls “triple convergence.” First, they entice drivers—who, because of congestion, had given up rush-hour driving—back to old habits. Second, drivers using alternate routes are drawn to the new, faster roads. And third, new roads lure both old and new users away from public transit. So not only do new roads not relieve traffic congestion; they create a feedback loop that draws money away from the one kind of investment that does—public transit. More road users means fewer transit users, which creates the temptation to reduce transit investment even further. What's worse is that this downward spiral fosters, even promotes, the fiction that money spent on public transit is a “subsidy” to those too poor to drive, as though carlessness is a disease searching for a cure.

“So what?” say free-marketers. “People make a rational choice to use their cars.” Right? Wrong! The truth is we lack true choice. How can a threadbare transit system compete with a lavishly endowed road network on even terms? It can't. In fact, according to the City of Calgary's 2017

Infrastructure Status Report, our city, historically, has spent more than five times as much on roads as on transit.⁸

But an efficient, well-appointed, properly planned transit network providing convenience, reliability, and an extended roster of destinations certainly could compete with roads and vehicles. In such a system, the lack of garage-to-garage convenience is offset by high user satisfaction rates and significant long-term savings to the city and to individuals.

Here are five suggestions for building a transit system that breeds enough confidence and loyalty to compete with cars.

1. *Provide seamless, city-wide connectivity.* The ability to get to (almost) anywhere from (almost) anywhere in a city is a hallmark of a great transit system. If people can't get to where they need to be, they won't use transit, no matter how user-friendly it is. Currently, Calgary's system focuses primarily on the downtown, leaving many major destinations difficult to reach via transit (Mount Royal University and the airport, for example). And because everything passes through the city's core, quadrant-to-quadrant connectivity is, at best, poor. Streetcars (trams) are an ideal means to supply such connectivity.
2. *Make ticketing friendlier.* Many cities have convenient swipe cards that can be recharged electronically. Others have cell phone apps for ticket payment. We do it for parking—why not for transit? Offer a variety of ticket packages to make the system more convenient for casual users, families, and tourists. Melbourne, for example, has a five-day pass, among many other options. Reducing prices on weekends builds ridership during non-peak periods. Very low prices for neighbourhood travel (one or two stops) bring more customers to local businesses. And why not ensure that ticket machines give change?
3. *Integrate the system.* Everything possible should be done to encourage ease of transfer between transportation modes. If transit can't be the whole trip, it can be part of it. We pay attention to the walkshed perimeter around train stations,

but what about bikesheds? In his 2017 PhD dissertation, Jason Ponto shows that most of Calgary could be served by investing in high-quality bike infrastructure within a ten-minute ride of train stations.⁹ Provide secure bike parking, too—lots of it. And find more ways to have bike-friendly buses and trains.

4. *Get the language right.* Urban transit is a necessary and vital component of sustainable world-class cities, not a charity. Removing the word *subsidy* from the transit conversation and replacing it with the word *investment* would be a good start.
5. *Make transit free and implement user fees (e.g., tolls) for use of highways.* The city of Tallin, Estonia, did just that in 2013, with modest results for increased ridership but more significant results in terms of numbers of people in low-income neighbourhoods taking transit.¹⁰ In 2018 the chair of the LA Metro Board called for free transit by 2028, funded by toll roads, and in 2020 Luxembourg became the first country to institute free transit.¹¹

In building our transit system, the principle of induced demand should be applied in reverse: relieve congestion not with new roads but by building a transit system people love.

LOOKING AHEAD TO THE PAST: A TALE OF THREE TRAM CITIES

Prior to the Second World War, trams—also called streetcars—were the mainstay of public transportation systems in cities around the world. And for good reason: trams provided reliable, predictable, accessible, human-scaled transportation serving the needs of working folk and the wealthy alike. Savvy investors, entrepreneurs, and property developers quickly realized the profit potential along tramlines, and businesses that provided service and value to local communities were soon flourishing. This powerful mixture of social and economic energy fuelled the emergence of the streets that have become some of our best-loved places.

Calgary once had an extensive tram network. The first tracks were laid in the early 1900s, and at its height in 1945, the system had fifteen routes serving all parts of the city, including Parkdale, Hillhurst, Kensington, Rosedale, Capitol Hill, Tuxedo, Riverside (Bridgeland), Inglewood, Ogden, Manchester, Elbow Park, South Calgary (Marda), and Killarney. Calgary's tram network was dismantled in 1950, when the private automobile was taking over as the city's dominant transportation choice. Although the trams were replaced, first with electric trolleys and later with diesel buses, their place-making power could not be replicated.

Portland, Oregon, is also a city with tram origins dating back more than a century. Following the war, Portland, like most North American cities, tore out its tram network and began building roads and expressways. And as elsewhere, Portland's core soon deteriorated as wealth, jobs, and commerce migrated to the suburbs.

In contrast to almost everywhere, however, Portland began reinvesting in public transit early on. By the early 1970s, three proposed freeways had been successfully resisted through public opposition. Another, Harbor Drive, was actually ripped out and converted to a riverfront park. The money originally intended for freeways was instead invested in a light rail system similar to Calgary's LRT. Yet development in the core lagged. As if finally realizing the place-making power of trams, the city reimagined a downtown line in the early 1990s, and in 2001 Portland's downtown streetcar, the first to be built anywhere in North America in almost a century, was inaugurated.

The results have been spectacular. Portland's Pearl District, once a deteriorating downtown industrial and warehouse zone, has been transformed into a flourishing mixed residential and commercial inner city neighbourhood. Because trams provide certainty, investors responded by sinking \$3.5 billion in private money along the line.¹² Now, instead of underused buildings and fearful streets, the area is festooned with parks, stores, restaurants, funky boutiques, food kiosks, museums, theatres, microbreweries, hotels, and one of the nation's liveliest coffee cultures. Oh—and people. Young and old, singles and families—people are reclaiming the inner city.¹³

Melbourne, Australia, is another city with a tram heritage akin to ours, but unlike Calgary and Portland, trams were never abandoned

there. Today, Melbourne has the largest tram system in the world and, because of it, some of the best streets in the world.¹⁴ Chapel Street in south Melbourne is a four-kilometre collage of shops, markets, restaurants, and entertainment that is adjacent to nearby high-density neighbourhoods. Here is persuasive evidence of the place-shaping power of trams. Small shops catering to local needs are interspersed with boutiques to provide a high-quality pedestrian realm. Pubs and eateries with abundant indoor-outdoor seating thrive year-round. Recent high-rise development is offset from the street, which retains the streetscape's original character and charm.

This is a tale of three cities. Melbourne embraced and maintained its tram identity. Portland lost it, but then reclaimed it. And in Calgary, trams are not even part of the conversation. This needs to change.

Apart from the social, economic, and environmental benefits of trams, perhaps the most compelling reason why we need them back is that they are a truly effective counterforce to urban sprawl. Calgary has the right idea by wanting to increase density around LRT stations, but the strategy as currently conceived does precious little to contain Calgary's relentless outward ooze. Sustainable Calgary's affordable living research found that trams can be a strong economic development attractor. They are more permanent than bus routes, so decisions about where to live, work, and go to school can be made based on the existence of a tramline. The tracks provide a legible, visual representation of the routes for tram users, and the technology for running trams on renewable electricity is proven in Calgary.¹⁵

A truly effective transit strategy makes the whole city transit-oriented, not just selected, ultra-high-density nodes. Only trams can make that happen. Unlike the standard LRT redevelopment model, which clusters high-density, high-rise living immediately adjacent to stations, tram-inspired transit-oriented design has a much gentler effect on local communities because the density is absorbed horizontally along corridors rather than vertically in towers. Progressive changes to zoning bylaws would permit mixed uses and moderate intensity near the line while ensuring that adjacent neighbourhoods remain intact.

If this strategy were implemented, a significant proportion of Calgary's future growth would be absorbed within its existing footprint, to the benefit

of our health, our wealth, and the environment. The really great news is that having once been a tram city, Calgary's street pattern for trams is already in place. It will take enlightened citizens to demand it, and fearless leaders at City Hall to make it happen. Melbourne and Portland have harnessed the power of trams to shape their cities for the better. We should too.

IN PRAISE OF THE BICYCLE: PEDALLING TO THE RESCUE IN THE CLIMATE EMERGENCY

Has there ever been a more perfect and joyous transportation technology than the bicycle? "Silent, swift, translucent; they barely stirred the air," writes Pablo Neruda in his poem "Ode to Bicycles."¹⁶ I've been a bike commuter in Calgary for over thirty-five years. The popularity of cycling has transformed over that time. My bike commute remains the most enjoyable part of my day, and apparently, I am not alone in this experience. A 2017 study by Dr. Yingling Fan of the University of Minnesota's Humphrey School of Public Policy found bicycling to be the happiest mode of transportation.¹⁷ As we focus our attention on the climate emergency, the humble bicycle just might be the gateway to a sustainable future.

Calgary has made positive but plodding progress on active transportation—using one's own power to get from A to B. In 2011 the City introduced its cycling strategy.¹⁸ In 2016 the City finally released *Step Forward*, its pedestrian strategy, which was recognized internationally in 2017 with a Best Project Award by the Institute of Transportation Engineers, based in Washington, DC.¹⁹ But as with so many planning policies, the challenge has been putting policy into action.

The downtown cycle track network was a godsend for cyclists. The trip through downtown was no longer a stressful exercise of hyper-vigilance for cyclists as they tried to safely navigate downtown auto and bus traffic, sharing lanes where car drivers treated them as illegal impediments to their efficient navigation of the city. But the political capital expended in the debate and defense of the meagre \$10 million spent on the modest 5.5 kilometres of cycle track was epic and exhausting, while hundreds of millions of dollars in road construction is routinely rubber-stamped by City Council with hardly a word spoken.

In 2020 we find ourselves in the midst of a global pandemic. In Calgary, we now see first-hand how active transportation infrastructure has become indispensable to a resilient city. Of all transportation modes, only active transport modes have seen an increase this year, and cycle shops are finding it hard to keep bikes in stock. They've seen sales go through the roof as many Calgarians are discovering the joy of cycling for the first time.

The trend is happening worldwide. Paris has just re-elected its progressive mayor, Anne Hidalgo, who has inspired the imaginations of urbanists around the world with her intention to make Paris a “ville de quartre-heure”—a fifteen-minute city, where everything residents need is a walk or bike ride away. The core of the plan is making all streets bike-friendly by 2024.²⁰ Indeed, Paris has been transformed this year, with hundreds of streets converted to bike lanes as a response to the pandemic. Paris, the ultimate global city of the past three hundred years, is set once again to transform the nature of cities with this bold initiative.

Paris seems intent on eclipsing Amsterdam and Copenhagen as Europe's most bike-friendly city. In 2016 Copenhagen achieved a milestone—there were more bike trips counted in Copenhagen's city centre than car trips.²¹ In 1970 car trips had outnumbered bike trips 3.5 to 1. By 2018, an impressive 49 percent of all trips were by bicycle.²² How did the citizens of Copenhagen make it happen? They elected a lord-mayor who dedicated himself to making Copenhagen a bike city, and the national government invested heavily in bike infrastructure. With the Cykelslangen (the Snake Bridge), the Inderhavnsbroen (the Kissing Bridge), and the Superkilen, Copenhagen now has some of the most beautiful and functional bike infrastructure in the world. Copenhagen officials have a goal to make the city centre car-free by 2025. A November 2016 article in *The Guardian* reported that the cost of twelve years (2004 to 2016) of creating bike infrastructure in Copenhagen was half that of constructing just one single vehicle bypass to the north of the city.²³ And as if that were not enough, this transformation has made Copenhagen one of the most rapidly decarbonizing cities in the world, with a 42 percent reduction in emissions from 2005 to 2019.²⁴

In Amsterdam, a city long synonymous with the bicycle, over half of all city-centre trips are by bicycle. In the Dutch city of Groningen, the

number is over 60 percent.²⁵ The first image of the city as you emerge from Amsterdam's central train station is a sea of parked bicycles and an impressive bikes-only roadway. London's bicycle use may catch up to these cities. With newly instituted policies to reduce air pollution and congestion, Transport for London reported in 2016 that bike commuters were expected to outnumber car commuters in the heart of the city by 2018.²⁶ And in fact, *WIRED* online magazine reported in 2018 that "during the morning rush in the City of London the most popular vehicle is now the bicycle."²⁷ Oslo, Norway, has a goal to make its city centre car-free and is investing much of its oil-generated wealth in new bike superhighways.²⁸ In response to the pandemic, Barcelona has added twenty-five kilometres of cycle lanes and continues to transform the core of its neighbourhood superblocks into car-free zones.²⁹

Tune in to any debate at City Hall these days and you are sure to hear councilors of all political stripes lamenting the cost of running our city. Likewise, Albertans are more conscious than ever of our own bank accounts, and our provincial government makes no bones about the need to tighten our belts in what will undoubtedly be a long road to weaning ourselves off fossil fuel-generated wealth and balancing the books. Well, bicycles to the rescue! A Vancouver study from 2015 compared various transportation options using a full-cost accounting methodology.³⁰ A car commute was calculated to cost \$2.78 per kilometre to society and \$6.47 in personal costs. Biking was calculated to incur \$3.70 per kilometre in personal costs and to actually deliver 75 cents in societal savings for every kilometre pedalled. Much of the savings from biking and walking are in avoided health care costs. For example, one UK study reported in the *British Medical Journal* in 2017 estimated that a regular bike commute cut the risk of cancer by 45 percent and of heart disease by 46 percent.³¹

ActiveCITY has just launched its *Playbook 2030*, a core element of its diversification strategy.³² The *Playbook* is designed to make Calgary North America's most active city by 2030. Bikes, bike infrastructure, and bike riders will be indispensable in that quest.

So whether it is saving the planet, saving your money, or safeguarding your health, the bicycle is the answer. As Sherlock Holmes author Sir Arthur Conan Doyle once wrote, "When the spirits are low, when the day

appears dark, when work becomes monotonous, when hope hardly seems worth having, just mount a bicycle and go out for a spin.”³³

EVERYTHING OLD IS NEW AGAIN: THE RIGHT STUFF ON THE EAST COAST

In the 1998 National Film Board of Canada documentary *Rain, Drizzle and Fog*, director Rosemary House profiles a series of St. John’s artists, including Mary Walsh (*This Hour Has 22 Minutes*), in an exploration of the attachment to place that St. John’s exerts, despite the oppressive dominance of various forms of moisture.³⁴ On a typical summer day, even during a particularly nasty bout of this meteorological affliction, St. John’s remains one of the most walkable cities in North America.

Many characteristics make the city walkable, but one prominent feature is the fact that it is old enough—some claim it is the oldest city in North America—to have been built long before the invention of the automobile. As a result, it was designed with humans in mind, not the machines that transport them. Though St. John’s and most other city districts of pre-auto vintage—Boston, New York, Montreal, Quebec City—have adapted to the automobile, the basic geometry remains human scale. These cities provide comfortable human habitat.

Google Maps provides a clear image of what is different about these pre-car cities—whether it is St John’s or Boston, or the pre-car centres of London, Paris, or Rome, or for that matter informal settlements in the exploding cities of developing countries, where a car is still out of reach for most people. The block pattern of these cities is more organic, probably the result of pedestrian preferences rather than master planning, and the block sizes are much smaller. These places developed organically, without the guiding hand of city planners and with their own pedestrian logic.

In *The Oldest City: The Story of St. John’s, Newfoundland*, Paul O’Neill recounts a British Navy lieutenant’s description of St John’s: “The Capital of Newfoundland consists of one very narrow street extending entirely along one side of the port.”³⁵ Water Street was the centre of commerce for fish merchants in the heyday of the North Atlantic fishery and remains so today, with offshore oil now the economic driver. The two winding lanes

of this still very narrow street are lined with small businesses and a dominant street profile of three to four storeys.

Some of these businesses, like the family-owned O'Brien's Music Store, are entering their eighth decade. The family still lives above the store—an example of mixed-use development before the term was ever coined. Water Street boasts bustling pedestrian traffic night and day and an acceptance of what in other cities might be derisively referred to as “jaywalking.” Even today on Water Street, nothing moves much faster than your average human on foot.

Another unique feature of St. John's is its walking lanes. Starting from Water Street, they wind their way up from the harbour, providing a variety of experiences for the meandering tourist and safe, quiet routes for people travelling through the inner city. McMurdo's Lane is home to The Duke of Duckworth, the favourite watering hole of Jake Doyle (the loveable detective of *The Republic of Doyle*).³⁶ Solomon's Lane is home to the heart of traditional Irish and folk culture in St. John's, The Ship Inn. A few blocks further on is Willicott's Lane, a residential thoroughfare with a long history. It originally housed fifteen hundred residents in two hundred squalid buildings under the thumb of a slum landlord. It burned to the ground twice in the great fires that hit St. John's in the 1800s and is today a pleasant haven where city-centre homes open onto quiet, clean lanes too narrow for cars.

Of course, not all is rosy in St. John's. Car-oriented high-rise development threatens the sense of place that allows residents to make their peace with the inclement North Atlantic weather. Metro St. John's has a growing sprawl problem to rival much larger cities. Even this old-city treasure finds it hard to resist the conventional development logic that defines North America. Roads, interchanges, big box malls are springing up at record pace. The west end of Water Street has been all but given over to the automobile, with an access freeway slicing into the downtown.

Calgary, like St. John's, was originally a walking city, and some remnants of that history can still be found along 17th Avenue and in Mission, Kensington, Inglewood, and a few other places. But in contrast to St. John's, which had almost five centuries to mature as a walking city, Calgary's experience lasted less than a generation. Already by 1910, just twenty-five years after Calgary's incorporation, the car was making an impact on city

design. But we can and should learn from earlier eras. Calgary’s laneways are an untapped resource, and City Council has begun exploring options like making laneway houses “allowable” rather than “discretionary” in city bylaws. In places like the downtown, East Village, and Manchester, we have a golden opportunity to once again put people first in city design.

Strolling along Water Street on a summer evening, with the fog horn at Fort Amherst, the entrance to St. John’s harbour, sounding in the distance, it is not hard to see how very old cities like St John’s offer clues to modern city design—liveability, walkability, and an appealing sense of place. In city building today, everything old is new again.

NOTES

- 1 Brent Toderian (@BrentToderian), Twitter post, 4 September 2019, <https://twitter.com/BrentToderian/status/1169307159491801088>.
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- 3 Numbers for US and Canadian cities can be found at “Public Transportation Ridership Report: Fourth Quarter 2018,” *American Public Transportation Association*, 12 April 2019, <https://www.apta.com/wp-content/uploads/2018-Q4-Ridership-APTA-3.pdf>. For Guadalajara ridership, see “Guadalajara Light Rail System,” *Railway Technology*, accessed 31 August 2020, <https://www.railway-technology.com/projects/guadalajara-light-rail-system/>.
- 4 Duncan W. Allen and Timothy H. White, “North American Light-Rail Transit Ridership and Operating Costs: A Basis for Comparison,” in *Seventh National Conference on Light-Rail Transit 2:27–35*, Conference Proceedings 8, Baltimore, Maryland, 12–15 November 1995 (Washington, DC: National Academy Press, 1997), <http://onlinepubs.trb.org/Onlinepubs/conf/1995/cp8/cp8v2-003.pdf>.
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