

Planning for Resiliency:
Density, Transportation, and Affordability

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I. INTRODUCTION

The North American lifestyle is coming to an end. Broadly speaking, there are two choices before us. We can continue to increase our consumption of finite fossil fuels, encourage suburban sprawl, and continue our love affair with the personal automobile. Conversely, we accept the reality of resource depletion, the fragility of our predominately energy intensive, low-density North American lifestyles, and we decide to transition for a post-carbon future. The first path essentially characterizes our current trajectory – business-as-usual. A handful of cities and an even smaller number of national governments have chosen the latter path of resiliency. What are the urban implications of inaction? What is the likelihood of change?

This is largely an urban story. As we move forward into a world of energy scarcity and global climate uncertainty, North American cities face many stark realities. Eighty percent of Canadians already live in cities.¹ Cities will face greater social pressures and ecological constraints as suburban dwellers move into cities where living costs are lower and public services are provided. Higher densities, affordability, and transportation alternatives are necessary for cities to become resilient in a warmer, post-carbon world.

II. THE TWIN CRISES

We are facing the twin crises of peak oil and global climate change – and it is a definitive time in the history of human civilization. If we choose the less desirable path, it will become increasingly difficult to reorient ourselves. In this paper, my primary concern will be transportation and the relationship to density. Clearly, issues of food security and political economy are fundamentally connected and cannot be ignored, but my discussion will focus on and the necessity for transportation alternatives and densification if we hope to live in resilient cities.

We have not yet faced such incredible challenges to the most fundamental aspects of our modern existence. In North America, we are particularly unprepared to effectively deal with these issues. The post-World War II urban form of Canadian and American cities has tended towards low-density, highly automobile-dependent communities. If a reconfiguration of the

¹ Matt Hern, *Common Ground in a Liquid City: Essays in Defense of an Urban Future* (Edinburgh: AK Press, 2010), 9.

urban landscape does not occur now by choice, it will be forced upon the North American majority by the reality of energy scarcity. This scenario likely be characterized as a period of incredible social inequity and great financial burden.

Oil is a limited resource. It is as simple as that. No matter how hard we try, there remains only so much conventional and unconventional oil in the ground. Our societies and economies are based on energy sources that are finite and will not replenish. The implications for a world increasingly dependent on the movement of goods and the easy flow of capital (facilitated by cheap oil) are immense. Globally, 70 percent of a barrel of oil is refined for transportation fuel and 98 percent of all transport energy is derived from oil.² The realities of global capitalism, and therefore, economic growth, necessitate an ever-growing supply of cheap oil for transportation. We must transition to renewable sources of energy, but we must also recognize that these sources will not sustain perpetual growth: “World energy resources are becoming constrained and transport costs are escalating.”³ Geophysicists estimated that world oil production would peak in 2005 and current oil prices confirm this reality. Renewable resources offer only a fraction of the current energy supplied by finite resources.⁴

Critics of energy scarcity, while admitting that oil is indeed finite, argue that immediate action is not necessary. In a capitalist system which establishes market values for everything, oil may be one of the undervalued commodities, considering its depletion means the collapse of the very economic system it supports: capitalism. Rising gasoline prices and a decreasing supply demonstrate why transportation alternatives and dense, mixed-use neighbourhoods are essential. In January 2000, a barrel of oil averaged \$18, and by June 2008, it averaged \$140 per barrel.⁵ Today, barrels are hovering around \$85,⁶ largely down due to decreased demand mirroring current economic realities.

² *A Crude Awakening*, DVD, directed by Basil Gelpke and Ray McCormack (Zurich: Lava Productions AG, 2006).

³ Michael J. Saunders, Tobias Kuhnimhof, Bastian Chlond, and Antonio Nelson Rodrigues da Silva, “Incorporating transport energy into urban planning,” *Transportation Research Part A* 42 (2008): 874.

⁴ Saunders, “Incorporating transport energy into urban planning,” 874.

⁵ Matthew T. Huber, “The Use of Gasoline: Value, Oil, and the ‘American way of life,’” *Antipode* 41, no. 3 (2009): 467.

⁶ Bloomberg, “Energy and Oil Prices,” Bloomberg L.P., 2010, <http://www.bloomberg.com/energy/>.

The very recent history of gasoline prices does not fully illustrate the problem. Observing overall oil trends, prices are steadily rising, making it increasingly unaffordable to maintain the suburban lifestyle. If we look to the years following World War II and the incredible suburbanization that followed, we see that “the postwar period demand for gasoline rose astronomically – rising 409 percent between 1946 and 1980.”⁷ Historical oil trends partially tell the story, but let’s look more closely at North American consumption. Is the reality of oil depletion more dire for Canada and the United States? A somewhat qualified *yes*. The United States is consuming 25 percent and 43 percent of global oil and gasoline supplies, respectively.⁸ North American urban form has been largely (and continues to be) based on low-density, resource intensive, single-use developments. This is not a recipe for resiliency.

The seriousness and urgency of a transition to low or carbon neutral cities becomes more apparent with the climate crisis. Fifty percent of species will be lost with only a two-degree increase in global temperatures.⁹ This scenario – or the very likely possibility of much more catastrophic temperature increases – puts our very existence into question. The faster we burn fossil fuels driving from the sprawl to work, the sooner this scenario will come to fruition. When petroleum products are burned, they become anthropogenic greenhouse gas emissions. Globally, 77 percent of oil is burned directly for transportation, and transportation accounts for 15 percent of carbon emissions.¹⁰ The US will likely experience the largest growth in GHG emissions from transportation. Most alarming, transportation is responsible for 28 percent of all energy consumed in the US – this is a 17 percent increase in transportation energy between 1995 and 2005.¹¹

If we are to address the energy and climate change crises, we must link transportation fuel consumption to suburbanization. High real-energy costs in early modern cities facilitated

⁷ Huber, “The Use of Gasoline: Value, Oil, and the ‘American way of life,’” 474.

⁸ Huber, 469.

⁹ Patrick Condon, *Seven Rules for Sustainable Communities: Design Strategies for a Post-Carbon World* (Washington: Island Press, 2010), 1.

¹⁰ Peter Newman, Timothy Beatley, and Heather Boyer, *Resilient Cities: Responding to Peak Oil and Climate Change* (Washington: Island Press, 2009), 25.

¹¹ Newman et al., *Resilient Cities*, 87.

high-density, mixed-used development, still evident in North American inner cities.¹² With peak oil, a return to this type of urban form is necessary as transportation from low-density residential developments to jobs in the city centre is unrealistic. Accessible public transit is vital, as “there is a strong negative correlation between how much fuel a city uses and how much transit it has.”¹³ Cities must be adequately dense to support a public transportation system.

III. GLOBAL AND CANADIAN URBAN REALITIES

The majority of North American cities have much work to do. Most European cities are on track for post-carbon resiliency. The European city is not the salvific answer to the twin crises, but what they are doing is working. Numbers prove it. The US is busying travelling a greater distance per day than any other country in the world, which translates into an average of nearly four automobile trips per person per day.¹⁴ The implications are profound. What does this mean for oil consumption and time surrendered to the car, often sitting in traffic? Illustrated another way,

[t]otal annual automobile vehicle miles travelled (VMT) per capita in the US was 41.4% greater than the average of the four European countries (France, Germany, Sweden, and the UK) whereas the number of automobiles per capita in the US was only 8% higher than the average of the four European countries.¹⁵

Critics often argue that European cities were founded years and years before North American cities and before the automobile. And therefore, we simply cannot use them for comparison. They are too different. Maybe. We must keep in mind that North American cities did have many of the same characteristics as European cities: dense, mixed-use, walking and transit oriented

¹² Igor Vojnovic, “The environmental costs of modernism.” *Cities* 16, no. 5 (1999): 302.

¹³ Newman et al., 86.

¹⁴ Sungyop Kim and Gudmundur F. Ulfarsson, “Curbing automobile use for sustainable transportation: analysis of mode choice on short home-based trips,” *Transportation* 35 (2008): 724.

¹⁵ Kim and Ulfarsson, “Curbing automobile use for sustainable transportation: analysis of mode choice on short home-based trips,” 724.

development. Vancouver was a streetcar city, along with most other Canadian and American cities until post-World War II suburbanization and the dominance of the personal automobile.¹⁶

Cars still dominate many European cities, but considerable investments have been made in public transit, cycling, and pedestrian infrastructure. Spatial constraints have limited sprawl (although it exists in many European metropoli), making density an easier sell, and essential for cities to accommodate growing populations. Suburbanization unleashed a potent political and social force: *automobility*. Automobiles have become an expression of “individualism, freedom, and democracy.”¹⁷ This force dominates local and regional politics (national, too) and planning processes in many highly auto-dependent cities, as residents reject public transit extensions in favour of more roads and wider highways.¹⁸ The role of automobility plays a significant role in shaping local and regional transportation and development priorities.

Cities with a high degree of automobile dependence – or automobility – are largely the least resilient. Cities’ resiliency to peak oil and climate change are fundamentally connected to transportation and development realities. Peter Newman’s “*resilient cities* can substantially reduce their dependence on petroleum fuels in ways that are socially and economically acceptable and feasible” and they have “built-in systems that can adapt to change, such as a diversity of transport and land-use systems.”¹⁹ Furthermore, Newman developed scenarios for cities based on how well they can adapt: collapse, divided, ruralized, and resilient.

Collapse is straightforward; these cities are unable to adapt to changing energy and climate realities. Basic institutions fail and considerable outmigration occurs.²⁰ Many southern

¹⁶ There has been a great amount written on the origins of post-World War II suburban development, the dismantling of public transportation in many major metropolitan cities, the creation of federal highway systems, and the rise of car ownership. Richard Harris’s *Creeping Conformity: How Canada Became Suburban, 1900-1950* (2004) provides a detailed account of Canadian suburbanization. Kenneth T. Jackson has written at length about the American history of suburbanization in *Crabgrass Frontier: The Suburbanization of the United States* (1985). Many other resources are available as well.

¹⁷ Jason Henderson, “Secessionist Automobility: Racism, Anti-Urbanism, and the Politics of Automobility in Atlanta, Georgia,” *International Journal of Urban and Regional Research* 30, no. 2 (2006): 295

¹⁸ Automobility certainly plays a role in national political discussions around transportation and funding for public transit versus highways. See Matthew T. Huber, “The Use of Gasoline: Value, Oil, and the ‘American way of life,’” *Antipode* 41, no. 3 (2009): 465-486.

¹⁹ Newman et al., 6.

²⁰ Newman et al., 37-40.

US cities could fall into this category, and Atlanta is a striking example. *Divided* cities will experience a very clear spatial distribution of wealth and poverty with the rich living in proximity to services and transit in exclusive enclaves. The poor will be relegated to auto-dependent areas with few publicly-administrated services; this arrangement will only exacerbate income inequalities and social disparities.²¹ Semi-agricultural communities would develop in the *ruralized* scenario; food production would be the primary function of households and nearly all needs would be met at the hyper-local level. The households would become the basic unit of the local economy.²²

Atlanta provides us with a cautionary tale. This incredibly resource-intensive, sprawling city lacks an accessible and extensive transit network, density, and continues to promote suburbanization. Atlanta is an extreme example of North American automobility:

The average person in Atlanta drives 40.5 miles a day. The average Atlanta commuter spends 67 hours, or over 8 working days a year, in congested conditions. These congested conditions last 8 hours a day, the average peak traveler consumes 46 excess gallons of gasoline annually, and congestion costs the average commuter US \$1,127 per year in equivalent lost time.²³

Not every North American city is in such bad shape. New York, Chicago, Seattle, San Francisco, Portland, among others, have invested in transportation alternatives and have pursued higher density development. While many cities are promoting transit use, cycling, and mixed-use development to foster walkable neighbourhoods and short commute times, cities including Atlanta, Phoenix, and Indianapolis will be *more* oil-dependent in the coming years. If current trends continue in Atlanta, “by 2025 only 10 percent of work trips will be on transit, and only 40 percent of the population will live within half a mile of transit.”²⁴ Atlanta exemplifies a city in the grips of automobility and petro-capitalism. The necessary planning responses to the twin crises are absent. But not all North American cities are so ill-prepared.

²¹ Newman et al., 47-51.

²² Newman et al., 41-47.

²³ Henderson, “Secessionist Automobility: Racism, Anti-Urbanism, and the Politics of Automobility in Atlanta, Georgia,” 297.

²⁴ Henderson, 302.

Portland, Oregon is a success story. It provides a delightful look into what a resilient, vibrant urban future will hopefully look like.²⁵ Growing up in the Portland area, it is also a city I am very familiar with. Portland (and Vancouver) were the few notable exceptions of cities with increasing densities.²⁶ Portland has been a leader in North American land-use planning, as a strong partner with the regional governance body, Metro, to restrict development within the Urban Growth Boundary (UGB).²⁷ Progressive land-use planning within the City of Portland has been fundamental in increasing the city's density.

Portland and Metro have also been successful in limiting suburban sprawl and increasing density with the expansion of regional light rail, known as MAX (Metropolitan Area Express), and the Portland Streetcar. The MAX is largely a commuter system, reaching out to Portland's suburbs, although it does behave like a streetcar within downtown Portland. MAX has fuelled higher density development along the line, most notably at Orenco Station in the suburb of Hillsboro. The Orenco Station community exemplifies the potential for transit-oriented, high-density, mixed-use development which new urbanists have long been calling for.²⁸ Portland did not stop with MAX; it has invested in an urban streetcar system which has further facilitated Portland's urban renaissance.

MAX and other similar forms of commuter light rail or rapid transit (subway or elevated models) are relatively expensive compared to streetcar systems which share existing street

²⁵ I could also spend considerable time discussing New York City, among other major metropolitan North American cities, due its likelihood to be a resilient post-carbon city. Largely due to its high density, mixed-use development, and low auto-dependency, it is the one of the greenest cities in the US. Eighty-two percent commute to work by transit, bike or on foot. If granted statehood, it would rank 51st in per capita energy consumption. When 1.5 million live within 23 square miles, opportunities to consume are greatly reduced. Matt Hern, *Common Ground in a Liquid City: Essays in Defense of an Urban Future* (Edinburgh: AK Press, 2010), 51.

²⁶ Patrick Condon, *Seven Rules for Sustainable Communities*, 7.

²⁷ Land-use planning has a rich history in Oregon. The state led the way in passing comprehensive land-use planning laws under Governor Tom McCall with the support of farmers and environmentalists. The Portland metropolitan area UGB was conceived in the late 1970s and became official regional policy in 1980. It is seen by many urban planners as a highly effective and visionary policy to restrict sprawl. Metro has been granted its powers by the State of Oregon, and has considerably more influence over land-use planning than Vancouver's regional governance body, Metro Vancouver. Metro, "Urban Growth Boundary," Metro Regional Government, 2010, <http://www.metro-region.org/index.cfm/go/by.web/id=277>.

²⁸ Bruce Podobnik, "New Urbanism and the Generation of Social Capital: Evidence from Orenco Station," *National Civic Review* 91, no. 3 (2002).

space.²⁹ Streetcars are also cheaper per passenger-mile at \$1.23 compared to diesel buses at \$1.62. The Portland Streetcar system also contributes to a much more vibrant street life than Vancouver with its diesel or trolley buses. The SkyTrain in many ways diminishes the streetscape – it does not exist on a “human” level. It rises above streets and neighbourhoods, and does not contribute at all to the street life in ways that streetcars do. Aesthetics aside, electric-powered light rail and streetcar systems do not directly release GHGs and are not dependent on oil.

Portland has achieved higher densities largely through progressive transportation planning. Between 1997 and 2005, 7,200 new residential units opened and 4.6 million square feet of new commercial space opened.³⁰ Urbanist Matt Hern appreciates how Portland has changed the way people get around in a city that sprawls 145 square miles in contrast to Vancouver’s 44 square miles. In Vancouver, a city with 48.3 people per hectare compared to Portland with 14.1 people per hectare, Portland’s efforts to increase alternative mode share are truly laudable.³¹ Portland has encouraged density without the rising housing costs we’ve seen in Vancouver.³²

Portland is a Mecca for young twenty and thirty-somethings who have chosen low-carbon lifestyles, living in the inner city and cycling or taking transit to work. And this is not particularly a wealthy demographic, but they have not been priced out of the rental or housing markets (see Figure 1). Vancouver’s cycling culture appears somewhat less impressive when we look at Portland. The city has the highest cycling mode share in North America at 5 percent in 2007.³³ Eight percent of residents listed cycling as their primary form of transportation, and ten percent consider it their secondary form.³⁴ In some especially youthful and geographically flat

²⁹ Portland’s ground-level MAX light rail system, with separate right-of-way from traffic, still remains cheaper than SkyTrain development. MAX costs about \$50 million per two-way mile and the SkyTrain costs \$200 million or more per two-way mile. MAX travels at speeds of up to 60 miles per hour when it has its own dedicated right-of-way. Condon, *Seven Rules for Sustainable Communities*, 32.

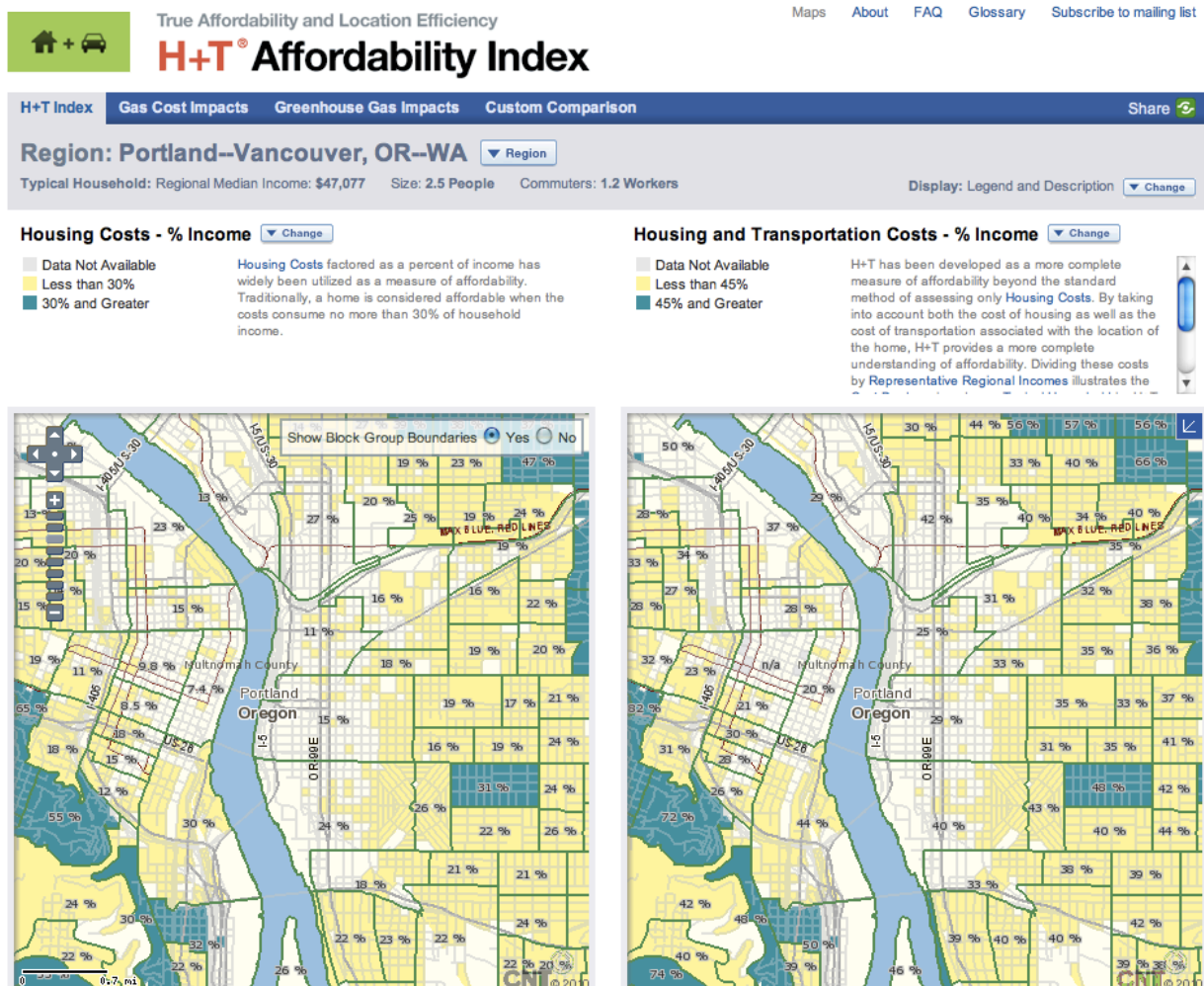
³⁰ Patrick Condon, *Seven Rules for Sustainable Communities*, 33.

³¹ Hern, 125.

³² Hern, 127-145.

³³ Jeff Mapes, *Pedaling Revolution: How Cyclists Are Changing American Cities* (Corvallis, OR: Oregon State University Press, 2009), 143.

³⁴ Mapes, *Pedaling Revolution*, 144.



neighbourhoods, notably inner southeast Portland, more than a quarter of the population considers cycling their primary or secondary means of transportation.³⁵ This has not happened magically; it's the result of sizeable investments in cycling infrastructure and proactive municipal politicians and planners. Portland is actively challenging automobility – and the results are encouraging. It is a quirky and sometimes truly weird city – something Portland prides itself on.³⁶ The city is building critical mass towards a new urbanism – and crucially, a sustainable and

³⁵ Mapes, 144.

³⁶ Portland's unofficial motto is "Keep Portland Weird." It will only take you a few minutes in Portland before you see these stickers throughout the city, notably in store windows.

affordable future for young people and middle class families. But really, is Vancouver so far behind?

IV. VANCOUVER

Vancouver has a rich history of social and environmental activism. From the founding of Greenpeace to Strathcona residents' opposition to highway construction through their neighbourhood, community engagement and activism are part of this city's collective personality. More recently, environmental and social justice movements came together in opposition to the Olympic Games. Activists and community residents were galvanized by the carving away of the Eagle Ridge Bluffs in West Vancouver for the widening of the Sea to Sky Highway and social displacement in the Downtown Eastside. This city is tough and can fight injustice and effect change. In many ways, we are already addressing the twin crises of peak oil and climate change, and we should approach the likelihood of Vancouver's resiliency with cautious optimism.

In many respects, Vancouver is an urban planner's paradise. The city is an anomaly in North America for both increasing density and reducing commute times, while experiencing considerable population growth.³⁷ The City's Living First strategy has contributed to this success. It aims at encouraging people to choose dense urban living in the downtown core over the suburbs.³⁸ By many accounts, it has been an incredible success. More than 20 percent of Vancouver's population lives downtown.³⁹ This is truly exceptional in contrast to cities losing population, such as Detroit or Cleveland. Although overall, Vancouver is losing its share of growth in the region to suburban municipalities which are growing faster.⁴⁰

The Living First strategy may have worked too well. There has been very little if any commercial development downtown, and consequently, jobs have stagnated in the core.⁴¹ This

³⁷ Condon, 7.

³⁸ Hern, 43.

³⁹ Hern, 45.

⁴⁰ Hern, 43.

⁴¹ Hern, 45.

raises the issue of reverse commuters. How many people are choosing an urban lifestyle, but are commuting to the suburbs? City planners have been actively working to promote dense, urban living, but the form it is taking is pricing low-income, middle class families, and young people out of both the rental and housing markets. Vancouver is a *liquid city* according to local urbanist Matt Hern. Capital flows easily into Vancouver, and largely into the real estate market. It is an investor's city, attracting the global elite, and increasingly becoming a playground for the wealthy. The housing crisis poses serious challenges to efforts to become more resilient and less oil-dependent.

An almost stagnant social housing stock, the lowest minimum wage in the country,⁴² a greater number of people wanting to live in Vancouver, and hosting the world's largest mega-event have all made living in the central city very expensive. Recent numbers put the average price of an east Vancouver house at \$608,174. On the west side, the average jumps to \$1,237,674. Renting is not cheap, either. In June 2009, the average for a two bedroom was \$1,154.⁴³ While 1,000 to 1,500 social housing units on average opened between the mid-1970s and 1990s, only 280 true social housing units opened over the last five years.⁴⁴ The Olympics highlighted the "liquid" nature of the city, and by many accounts, exacerbated an already unaffordable housing and rental market: "Property has become another commodity for the global elite to invest in, to buy and flip, especially in the hot cities like Vancouver and Dubai and Shanghai."⁴⁵ Beyond the commodification of property, 'sustainability' is now treated as a commodity⁴⁶ – living green is sexy and it comes at a price.

⁴² BC's minimum wage has remained frozen at \$8 per hour since the BC Liberals came to power in 2001.

⁴³ Hern, 129.

⁴⁴ The provincial government changed has changed its definition of social housing after the BC Liberals came to power in 2001 to include supportive housing and rental assistance housing, essentially any occasion when there is provincial money involved. Traditionally, social housing has been defined as housing for low-income elderly people or low-income families and individuals. That's why it is important to look closely at housing numbers released by the BC government. Seth Klein and Lorraine Copas, "Unpacking the Housing Numbers: How much new social housing is BC building?" *Canadian Centre for Policy Alternatives* (Vancouver: Canadian Centre for Policy Alternatives, 2010), available at <http://www.policyalternatives.ca/publications/reports/unpacking-housing-numbers>.

⁴⁵ Hern, 46.

⁴⁶ Hern, 47.

Current Vancouver housing realities make the suburbs increasingly attractive to families and low-income people. Low-density suburban living often necessitates car ownership. To relieve the congestion and appease suburban voters (and the business community), the provincial government introduced the Gateway Program, a massive road-building initiative full of empty promises for public transit funding. This regressive initiative undoes years of progressive transportation planning. Dense, urban living becomes more attractive when transit services expand and road development is halted. The region has used congestion as an incentive to encourage higher density planning and encourage public transportation:

The senior TransLink official noted that traffic congestion has helped the regional transportation authority leverage additional funding and support for more transit infrastructure in the region, and stressed that it has been a very important factor on this front: ‘traffic congestion can be harnessed to create an appetite for, and recognition of, the economic value in investment in transportation alternatives.’⁴⁷

Unfortunately, the province’s plan directly contradicts regional and municipal planning goals and is reminiscent of transportation beliefs from years ago. If you build more capacity for cars, congestion will decrease. Wrong. When you build more capacity, congestion will return.⁴⁸

The provincial government’s road-building program poses three major problems. Gateway assumes that the era of cheap oil will continue and leaves the region highly susceptible to oil shocks, and therefore less resilient. It undermines cities’ efforts to encourage transit-oriented, high-density, mixed-use developments, and stalls or even completely trumps transit initiatives.⁴⁹ Finally, it perpetuates energy inequity in the region. Gateway inherently reinforces automobility with the allocation of public resources to roads, and away from transit. Suburban residents, who cannot afford to live in the transit-oriented central city but cannot afford to own a vehicle, are the victims of energy inequity. In Ivan Illich’s *Energy and Equity*, he argues that

⁴⁷ Graham Senft, “The Conscious City: Traffic Congestion and Change Toward Sustainability in Metro Vancouver,” *Urban Environment* 3 (2009): 99.

⁴⁸ Anthony Downs, “The Law of Peak-Hour Expressway Congestion,” *Traffic Quarterly* 16, no. 3 (1962): 393-409.

⁴⁹ This reality is exemplified by the long overdue rapid transit projects for the Broadway corridor and to Port Coquitlam (Evergreen Line).

[t]he man who claims a seat in a faster vehicle insists that his time is worth more than that of the passenger in a slower one. Beyond a certain velocity, passengers become consumers of other people's time, and accelerating vehicles become the means for effecting a net transfer of life-time.⁵⁰

The province's Gateway Program is an example of energy inequality. The massive investments in road building – in contrast to the paltry funding promises for transit – reinforce automobility in the region. The province is rewarding drivers (and the trucking industry) by valuing their time ahead of those choosing, or reliant on, public transit. The Gateway Program is an especially tragic example of misplaced priorities and reactionary policymaking. Furthermore, the program displays the divergence between municipalities and the provincial government. With any challenge, we should expect some setbacks. Gateway is very unfortunate, but it should not paralyze us from continuing to push for change.

V. CONCLUSION

The future (if we want it): resiliency in Vancouver

Density, transportation, and affordability are central and interconnected issues – and all three must be part of any response to peak oil and climate change. I briefly provided the context of the twin crises to illustrate the urgency for densification and transportation alternatives. The better-planned North American cities, along with many other well-planned metropolitan centres around the world, will not collapse,⁵¹ but the changes we make now (or fail to make) will largely define how resilient our cities will be. The significance of illustrating existing barriers to a more sustainable and equitable future is important. *We must recognize our (sub)urban successes and failures.* We know higher density, mixed-use, transit and walking oriented communities are less resource intensive. In many places, we are rediscovering the highly efficient North American streetcar city of the past – and it is a correct response to an age of energy scarcity. We know that

⁵⁰ Ivan Illich, "Energy and Equity," in *Toward a History of Needs* (New York: Pantheon, 1978), 10.

⁵¹ Many North American cities, exurban in form, will collapse. We cannot ignore urban history – some cities are simply more fortunate in the ways they have developed. As I mentioned, unless dramatic steps are taken to quickly ween residents off oil and resource intensive lifestyles by encouraging a mass resettlement of the urban core, these cities will collapse or become divided cities. Many of the candidates for collapse are also situated in regions with little access to freshwater and have alarmingly low water tables. They are drought-prone regions and local food production will become increasingly challenging, if not impossible.

roads encourage sprawl. We know the suburban lifestyle is highly dependent on oil. Put simply, we need to acknowledge these realities and move forward with the correct responses.

Vancouver is in good shape in comparison to many North American cities. We have many reasons to be grateful for past planning decisions, which have led to an increase in density and challenges to predominant North American automobility. This is no reason for complacency. Progressive policy and planning must continue, and it is inspiring to see changes occurring. The current Vancouver City Council is taking steps to encourage cycling, making it an integral part of the city's transportation network. The debate over protected bike lanes in the city brought the issue of automobility to the surface. These are necessary discussions and debates – and it is very encouraging that transportation is an issue that people are talking about.

The twin crises of energy and global climate change provide us with an opportunity to reshape our cities. Higher densities, affordability, and transportation alternatives are necessary for cities to become resilient in a warmer post-carbon world. Many of the necessary changes are occurring in cities – and we must learn from our urban friends around the world. Our actions must be coordinated and well planned, but communities and neighbourhoods must form the foundation for this movement. Governments follow; they do not lead. Comprehensive regional and municipal planning responses are necessary, but specific neighbourhood plans are also essential in moving towards a resilient future. A logical next step is to look at particular neighbourhood needs and begin incorporating these localized plans into the broader response, which is already beginning to take shape in Vancouver. The future is not bleak, but we must engage in a constructive dialogue with our neighbours, family, and government. Reshaping our urban landscape is no small task – we will literally be saving our planet by saving our cities.

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