



February 9, 2022

Sav Dhaliwal, Chair, & Directors
Metro Vancouver Regional District,
Adriane Carr, Chair & Members
Metro Vancouver Climate Action Committee,
Jonathan Coté, Chair & Members
Metro Vancouver Regional Planning Committee

Dear Chairs, Directors & Committee Members:

METRO 2050 CLIMATE COURSE CORRECTION: WIN-WIN-WIN SOLUTIONS, VISION & STRATEGY ALIGNMENT

I urge Regional District Directors, Climate Action and Regional Planning Committee Members to align Metro 2050's strategies with its vision, adopting a basic course correction framework along with six win-win-win solutions.

Strong Vision and Status Quo Strategy on Policy Fundamentals

Metro 2050's vision and goals set sight on a prosperous, sustainable, low carbon, resilient future, improving on *Metro 2040*. *Metro 2050's* strategies, nevertheless, keep the region on course for a high carbon, high congestion, high cost, high risk and high inequity destination. Metro Vancouver explicitly articulates the strategies' essence:

"...no changes have been made to the location of any of the land use designations, the Urban Containment Boundary, the Urban Centres and Frequent Transit Development Areas, or the Special Study Areas."

"There are currently about 6,500 hectares of lands with the regional land use designation 'General Urban' within the UCB, that are undeveloped or rural and planned for future urban growth... the remaining urban lands within the UCB will be largely developed over the next 15-20 years... These areas are expected to be developed as mainly low-density housing with some higher density..."

The "undeveloped" 6,500 ha within the UCB is roughly the size of a medium sized municipality, e.g., half a City of Vancouver by area, one West Van, two Port Moody's, four New Westmisters or five City of North Vancouver's.

Metro 2050 Implications

Metro Vancouver's very own growth projections for undeveloped land have three implications:

- 1. Increased Carbon & Congestion:** Increase passenger vehicle GHGs an estimated 4.66 per cent by 2030 from 2010 levels versus contributing to a targeted 60 per cent reduction and add an estimated 650 million km of driving per year on Metro Vancouver roads versus a 25 per cent reduction as targeted by the BC Government.
- 2. Loss of Urban Tree Canopy & Climate Resilience:** "Result in a loss of over 3,000 ha of tree canopy," according to Metro Vancouver, virtually wiping out the prospect of a target of increasing urban tree canopy from 32 per cent to 40 per cent. Implications include increased stormwater management costs, increased vulnerability to flooding and heat wave events and a sustained decline in ecosystem health and biodiversity.
- 3. Increased Civic Infrastructure Deficits & Intergenerational Inequity:** Increase civic infrastructure deficits because low density development doesn't generate enough revenue to operate, maintain and replace its civic infrastructure. This is a significant additional burden on future taxpayers, further exacerbating one of the greatest inequities of our time: intergenerational inequity. Young people today will not only confront greater climate change impacts, under current policy, affordability, congestion and taxpayer burden will grow and public services will decline. Young, disadvantaged populations will be more adversely impacted.

2030 Driving	2040 Driving	2030 GHGs	2040 GHGs	2030 Tree Canopy	2040 Tree Canopy
650 million km additional driving in Metro annually	one billion km additional driving in Metro annually	4.66% passenger vehicle GHG increase annually	5.25% passenger vehicle GHG increase annually	5% urban tree canopy loss in Urban Containment Boundary	10% tree canopy loss in Urban Containment Boundary

Course Correction Framework & Six Big Moves

Metro Vancouver Directors are urged to adopt the following basic framework to steward a course correction:

1. Quantify the contribution of Metro 2050 strategies to key targets in Metro 2050 and Climate 2050
2. Annual monitoring, reporting and continuous improvement to strengthen alignment between goals and strategies and align Metro 2050 with other key Metro Vancouver policy priorities.
3. Enhance Metro 2050 with stronger support for Win-Win-Win strategies.

Metro’s climate agenda is built on *big moves*. None yet exist on land use. Here are six. Each and every municipality, your residents, businesses and taxpayers and the region would benefit environmentally, socially and economically.

1. Transit Hub Housing & Commercial
2. SkyTrain Connected Freight Consolidation Centres & Zero Emission Courier Vehicles
3. Industrial Land Protection & Intensification
4. General Urban Resiliency & Gentle Intensification
5. Connecting Big Urban Centres - Frequent Transit Corridor Focused Growth
6. Greenspace Protection

Fairness & Governance Conundrums & High-Benefit, Low-Cost Course Correction

Some municipalities may deem some of these win-win-win solutions as unfair because the historical norm has been to incrementally extend the urban containment boundary, even if other municipalities are adversely impacted by increased congestion and reduced transit revenue. These have been deemed the costs of development. It is a bit unfair to change the rules. However, today, we have evidence that the costs far outweigh the benefits.

Municipalities are growing their infrastructure deficits. Congestion costs the region socially and economically billions annually. Municipal decisions have inadvertently contributed to the largest and fastest growing GHG sources. The impact of singular climate change events to single communities can be billion-dollar catastrophic losses. This, too, is unfair. Fortunately, the course correction is a long-term win-win-win for all municipalities.

Many elected officials and staff have conscientiously invested immense energy to update the Regional Growth Strategy, acknowledging shifting priorities and meeting the expectations necessary for adoption. The threshold for RGS adoption—unanimity—makes it immensely challenging to steward the course corrections needed to reach our shared vision and goals. Only elected officials can drive this course correction.

I am carbon copying key provincial ministers as Metro Vancouver is a flagship jurisdiction and comprises half of B.C.’s population. *Metro 2050* has huge implications for contributing to provincial CleanBC, affordability and transportation policies and targets and advancing market transformation across B.C., Canada and North America.

Respectfully,

Alex Boston
 Executive Director, Renewable Cities
 Fellow, Morris J. Wosk Centre for Dialogue

Encl. Briefing: Metro 2050 Climate Course Correction: Win-Win-Win Solutions, Vision & Strategy Alignment

c.c. Honourable Rob Flemming, Minister of Transportation & Infrastructure
 Honourable George Heyman, Minister of Environment & Climate Change Strategy & TransLink
 Honourable Bowinn Ma, Minister of State for Infrastructure
 Honourable Jose Osborne, Minister of Municipal Affairs

METRO 2050 CLIMATE COURSE CORRECTION: WIN-WIN-WIN SOLUTIONS VISION & STRATEGY ALIGNMENT

Metro 2050's vision and goals set sight on a prosperous, sustainable, low carbon, resilient future, improving on *Metro 2040*. *Metro 2050's* strategies, nevertheless, keep the region on course for a high carbon, high congestion, high cost, high risk and high inequity destination. Metro Vancouver explicitly articulates the strategies' essence:

"...no changes have been made to the location of any of the land use designations, the Urban Containment Boundary, the Urban Centres and Frequent Transit Development Areas, or the Special Study Areas."ⁱ

"There are currently about 6,500 hectares of lands with the regional land use designation 'General Urban' within the UCB, that are undeveloped or rural and planned for future urban growth... the remaining urban lands within the UCB will be largely developed over the next 15-20 years... These areas are expected to be developed as mainly low-density housing with some higher density..."ⁱⁱ

When the IPCC underscores that land use planning is the most important local government focus, it is fundamentally about these policies that are consistent between Metro 2040 and Metro 2050. These are the policies that essentially determine the carbon intensity of an urban region, its resilience to climate change impacts and the co-benefits to affordability, congestion management, urban tree canopy, stormwater management costs, equity, civic infrastructure deficits public health and the economy.

There are, nevertheless win-win-win strategies for each and every municipality. Their residents, businesses and taxpayers and the region would benefit environmentally, socially and economically. Some are net money makers.

Many regional district and municipal elected officials and staff have conscientiously invested immense energy to update the Regional Growth Strategy, acknowledging shifting priorities and meeting the expectations necessary for adoption. Ironically, they have succeeded. The threshold for Regional Growth Strategy adoption – unanimity – makes it immensely challenging to steward the course corrections needed to reach our shared vision, goals and targets. Only elected officials can drive this course correction. Fortunately, this new direction offers greater prosperity, including lower congestion and higher industrial and employment land outcomes and the lowest cost solutions to some of our highest priorities.

Metro 2050 Fundamentals Consistent with Metro 2040

Metro 2050 has stronger aspirational commitments than Metro 2040 on GHG reductions, climate resilience, urban tree canopy, affordable housing and Indigenous relations. There are some new targets, e.g., urban forest canopy expansion from 32 per cent to 40 per cent by 2050 and 15 per cent of new housing in Urban Centres is affordable rental. The emphasis of these enhancements, nevertheless, is *encouraging* and *promoting*. As such, the likelihood of meeting these important priorities and target is highly uncertain.

Fundamentally, moreover, a Regional Growth Strategy is a land use plan. The Metro Vancouver staff report on Metro 2050 concludes the overarching land use framework is the same as Metro 2040.

"The same parcel-based map data from Metro 2040 has been used to create the Metro 2050 maps meaning no changes have been made to the location of any of the land use designations, the Urban Containment Boundary, the Urban Centres and Frequent Transit Development Areas, or the Special Study Areas."ⁱⁱⁱ
[emphasis added for clarity]

These are the unchanged policies that have inadvertently enabled land development to be a major contributor to driving the largest and fastest growing source of GHGs in Metro Vancouver.

When the IPCC underscores that land use planning is the most important focus for local government, it is fundamentally about these policies that are consistent between Metro 2040 and Metro 2050. These are the

policies that essentially determine the carbon intensity of an urban region, its resilience to climate change impacts and the co-benefits to affordability, congestion management, urban tree canopy, stormwater management costs, equity, civic infrastructure deficits public health and the economy.

While there are some positive thrusts in these land use designations with *potential* to push the region forward on many of its aspirational commitments, notably *Urban Centres* and *Frequent Transit Development Areas* (the latter requiring stronger criteria but overall very positive), there are currently even more powerful thrusts pushing the region backwards on its targets, notably the undeveloped lands within the *Urban Containment Boundary* and *Special Study Areas*, and inadequate policy emphasis on the region’s single largest geography: *General Urban*.

Metro 2040, it should be appreciated, also had commitments to reduce GHGs and increase rental housing and affordability. Metro Vancouver is certainly not solely responsible for not delivering on these commitments. Every level of government has some responsibility: municipal, regional, provincial and federal, and there are diverse social and economic forces at play that frustrate progress on these commitments but it is not impossible to deliver on them and local government authority and opportunity for action is immense. Some key opportunities for progress are outlined in the *Six Big Moves*, below.

Metro Vancouver Land Use Projections: Evidence We Are Likely to Fall Short

Excellent Metro Vancouver analysis recently completed on urban tree canopy and impervious surfaces made the following projections regarding land use based on the designations in Metro 2040 now proposed for Metro 2050:

“There are currently about 6,500 hectares of lands with the regional land use designation ‘General Urban’ within the UCB, that are undeveloped or rural and planned for future urban growth...

It is assumed that the remaining urban lands within the UCB will be largely developed over the next 15-20 years...

These areas are expected to be developed as mainly low-density housing with some higher density areas but the relative proportions of housing types is unknown.”^{iv} [emphasis added for clarity]

The “undeveloped” 6,500 ha within the UCB is equivalent to 65 km², roughly the size of a medium sized Metro municipality, e.g., half a City of Vancouver by area, one West Van, two Port Moody’s, four New Westmisters or five City of North Vancouver’s.

2040 Population	2040 Households	2030 Driving Vehicle KMs/Year	2040 Driving Vehicle KMs/Year	2030 Tonnes Transportation GHGs/Year	2040 Tonnes Transportation GHGs/Year	2030 Hectares Urban Tree Canopy Loss	2040 Hectares Urban Tree Canopy Loss
150,000	65,000	650,000,000	1,040,000,000	205,000	230,000	1,500	3,000
15% of MV total growth estimate	14% of MV total growth estimate	650 million km additional driving in Metro annually	1 billion km additional driving in Metro annually	4.66% passenger vehicle GHG increase annually	5.25% passenger vehicle GHG increase annually	5% tree canopy loss in Urban Containment Boundary	10% tree canopy loss in Urban Containment Boundary

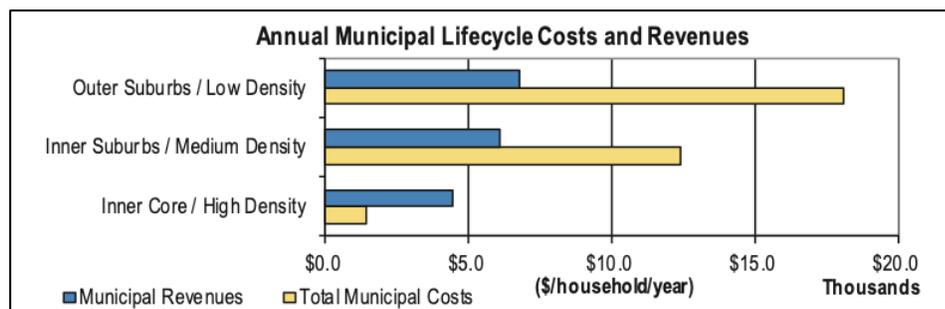
Buildout of undeveloped lands within urban containment boundary and implications to GHGs, transportation activity and urban tree canopy loss based on conservative extrapolations of similar locations and neighbourhood types and Metro Vancouver analysis. If this growth was re-allocated to an Urban Centre or high-quality frequent transit corridor, vehicle kms travelled and GHG tonnes could be reduced by two-thirds or even play a role in driving net reductions in GHGs and driving kms and increases in urban tree canopy growth. See references for assumptions. ^v

Metro Vancouver’s growth projections for undeveloped land in the Urban Containment Boundary, consistent across Metro 2040 and Metro 2050, have three implications:

- 1. Increased Carbon & Congestion:** Location, location, location: the single biggest determinant of a household’s contribution to carbon and congestion is proximity to major employment hub. Because these undeveloped areas are far from jobs and good transit, developing these lands will put significant upwards pressure on carbon and congestion in the region. In the nine years between 2010 and 2019, Metro Vancouver’s GHG emissions dropped by 1 per cent, leaving us with eight years to close the rest of the gap to the 45 per cent reduction

target. Metro Vancouver’s projected development in the undeveloped will increase passenger vehicle GHGs an estimated 4.66 per cent by 2030 from 2010 levels versus contributing to a targeted 60 per cent reduction. The auto-oriented urban form will put an additional estimated 650 million km of driving per year on Metro Vancouver roads by this time horizon versus reducing regional driving by 25 per cent, as targeted by the BC Government. By 2040, at full build out, an estimated one billion km in additional driving will be added to roads with a 5.25 per cent increase in passenger vehicle GHGs.

2. **Loss of Urban Tree Canopy & Climate Resilience:** Metro Vancouver’s Regional Tree Canopy study projects that this development “would result in a loss of over 3,000 ha of tree canopy,” virtually wiping out the prospect of meeting Metro 2050’s target of increasing urban tree canopy from 32 per cent to 40 per cent by 2050. Any stepped-up urban forest policy elsewhere in the region would be hugely challenged to compensate for this immense loss, not only in hectares but also in carbon and ecosystem value (3,000 ha is roughly equivalent in area to all of Port Moody or two New Westminsters.) Largely due to greenfield development followed by trends within existing developed areas, **“the tree canopy cover within the UCB is projected to decrease from 32 per cent to 28 per cent by 2040,” according to the Metro Vancouver study.** Consistent with this report, the loss of urban tree canopy would be eclipsed by the loss of impervious surfaces. **The implications for Metro Vancouver due to forest canopy and impervious surface loss are increased stormwater management costs, increased vulnerability to flooding and heat wave events, and a sustained decline in ecosystem health and biodiversity.**
3. **Increased Civic Infrastructure Deficits & Intergenerational Inequity:** Because low density development doesn’t generate enough revenue in property taxes and utility fees to operate, maintain and replace its civic infrastructure (e.g., water, road, stormwater, sewage), let alone its share of other municipal services (e.g., library, emergency...), **these areas “to be developed as mainly low-density housing” will increase municipal civic infrastructure deficits.** BC Ministry of Municipal Affairs has created an excellent tool (the Community Lifecycle Infrastructure Costing “CLIC” Tool) to help local governments better understand these revenues and expenditures.^{vi} Analysis for pilot communities should not be transposed precisely across local governments due some unique variables. These pilot communities do, nevertheless, provide useful order of magnitude insights.



Pilot Studies of Annualized Infrastructure Costs & Revenues by Neighbourhood Type (BC Ministry of Municipal Affairs) ^{vii}

Low density urban form is a significant burden on future taxpayers, further exacerbating one of the greatest inequities of our time: intergenerational inequity. Young people today will not only confront greater climate change impacts, under current policy, affordability, congestion and taxpayer burden will grow and public services will eventually have to decline. Young, disadvantaged populations will be more adversely impacted.

THE BEST DEAL IN TOWN: SUSTAINABLE LAND USE COURSE CORRECTION

As discussed in an earlier brief to Metro Vancouver Directors and committee members, sustainable land use is *the* lowest cost climate action strategy. As the OECD and the Global Commission on Climate and Economy have underscored, sustainable land use (i.e. focusing mixed use growth in centres and along corridors supported by transit, the general Metro Vancouver 2050 vision but unfortunately not the strategy) is a money maker for

communities. Other widely recognized benefits include improved health (hence, also reduced Provincial costs), potential to secure affordable housing and more land available to support economic growth.

Shifts in Metro 2050 have the potential to support member municipalities in prioritizing sustainable land development patterns at a time when effective action on climate and other regional crises is urgent.

Making Metro 2050 Matter: Cornerstone Climate Actions to MV on RGS

Building on Metro 2040, the bones of Metro 2050 are strong, with a vision of dense, mixed-use and interconnected urban centres that incorporate affordable housing combined with protection of green lands. As noted above, the challenge is that supporting policies are not likely to be enough to achieve the vision. Three enhancements are recommended:

1. **Quantify the contribution of Metro 2050 strategies to key targets in Metro 2050 and Metro Vancouver's Climate 2050 and Clean Air Plan.**

- *Climate 2050 targets:* land use contributions to regional GHG emissions from transportation (-40 per cent (-65 per cent in passenger vehicles and 135 per cent in commercial vehicles)), shifts in building stock due to expected land use patterns, and terrestrial carbon storage.
- *Vehicle driving:* Vehicle kilometres travelled, a key determinant of congestion and carbon emissions, and a provincially relevant target.
- *Other Metro 2050 Targets:* 15 per cent of new affordable rental housing in housing development in urban centres and 40 per cent urban forest canopy by 2050.

Note: Metro Vancouver is a leader in North America in data collection for energy and emission-related activity. Quantifying land use contributions to these targets, and/or gaps, based on strategies, is reasonable and would further demonstrate our leadership.

2. **Annual monitoring, reporting and continuous improvement** to strengthen alignment between goals and strategies, and align Metro 2050 with other key Metro Vancouver policy priorities, notably Climate 2050 and Clean Air Plan targets. Metro Vancouver's performance dashboard and reports provide an excellent starting point but should highlight key metrics like regional GHG emissions.

- Direct, clear reporting to update elected officials and staff in Metro Vancouver and across the federation on progress towards targets and progress on implementation of policies and actions is an opportunity for the region and member municipalities to learn quickly from experience and implement world-class innovations in land use management to close gaps.

3. **Enhance Metro 2050 with stronger support for Win-Win-Win strategies:** sustainable land use is already encouraged in Metro 2050. The recommendation is for member municipalities to strengthen policy support for this low- to no-cost strategy, with the potential for much-improved outcomes for the region's existing and yet-to-be-built communities.

Advancing Win-Win-Win Strategies: Six Big Moves

There is low hanging fruit that municipalities in the region are not harvesting. This fruit is hanging on regional and local land use decisions and is best harvested through Metro 2050. Some of this fruit has fallen to the ground. We have inadvertently stepped on it, compromising the opportunity.

While Metro's climate agenda is built on *big moves*, there are no big moves on land use. The Clean Air Plan states:

"Strong regional land-use policies are foundational to achieving the targets in the Clean Air Plan. Building compact, mixed-used communities that connect homes, jobs and recreation with walking, cycling and public transit will reduce driving emissions and will support the protection of important lands such as agricultural and industrial lands, and natural areas"

While the IPCC underscores the most important arena for local governments’ fight against climate change is land use due to GHG reduction potential, low cost and high co-benefits^{viii}, **it is unclear if net GHG reductions can be attributed to Metro 2050 and almost certainly none over Metro 2040 as land use designations are unchanged.**

The following are six win-win-win strategies. *Each and every municipality, their residents, businesses and taxpayers, and the region would benefit environmentally, socially and economically.* Some are net money makers, generating revenue for municipalities and TransLink. The common ground upon which to make this course correction is immense. We have the turning radius to make it!

Wins!	Economic	Environmental	Social
↓ household and business transportation spending	√		√
↑ low to no cost affordable housing units	√		√
↓ civic infrastructure deficits, notably for edge municipalities	√	√	√
↓ congestion	√	√	√
↓ upwards pressure on property taxes, utility fees, transit fares	√		√
↑ industrial/mixed use employment development potential	√		√
↑ TransLink farebox and rental revenue	√	√	√
↑ transit, walking and cycling mode shares	√	√	√
↓ obesity from increased active travel	√		√
↑ urban tree canopy and permeable surface area	√	√	√
↑ resilience to climate impacts: flooding, heat wave, water security	√	√	√
↑ opportunities for seniors to age in place	√		√
↓ public care costs for seniors	√		√
↓ greenhouse gas emissions	√	√	√
↓ stormwater management costs	√	√	√

The Big Moves

1. **Transit Hub Housing & Commercial:** Stack housing, commercial and institutional atop rapid transit stations, bus exchanges and bus depots. This is “free” underutilized land. This strategy is consistent with the RGS and aligns with OCPs. This land can generate ridership, farebox revenue and rental revenue for TransLink and deep regional GHG reductions. While affordable rental and social housing should be a primary objective, this should not preclude market housing to meet revenue priorities and accommodate the socio-economic diversity of a municipality. These transit assets should become attractive, dynamic neighbourhood hubs. This strategy can improve taxpayer return for the hundreds of millions invested in these assets. This profitable public procurement program has potential to also catalyze a prefabricated, mass timber industry in B.C. to meet domestic and international markets for net zero, sustainable construction: an immense growth industry.
2. **SkyTrain Connected Freight Consolidation Centres & Zero Emission Courier Vehicles.** The region’s and continent’s fastest growing source of carbon is urban freight. Leading urban regions are reversing this trend. A hierarchical network of centres consolidates courier freight for pick up and drop off. In Metro Vancouver it may be possible to capitalize on our rapid transit network, using the SkyTrain network to move goods across much of the region efficiently. The RGS could prioritize the acquisition of land for consolidation centres where cargo bikes and vans pick up and drop off parcels. Metro could dramatically curb growing congestion and eliminate the fastest growing source of regional GHGs by 2030.
3. **Industrial Land Protection & Intensification:** Adopt well-established Metro Vancouver and municipal recommendations to protect and intensify industrial and employment land. Hard policies should be adopted to ensure zero loss of industrial and employment land *and* zero loss of agricultural, ecologically significant land. Strengthen integration of industrial and employment into mixed use. Remove remaining barriers and provide

incentives to build multi-storey industrial and warehouse buildings close to transportation assets for employees and goods movement, returning to the form of a century ago, catching up to other leading jurisdictions.

4. **General Urban Resiliency & Gentle Intensification:** Metro 2050's policy for General Urban leaves too much flexibility and doesn't support alternatives strongly enough. Tremendous changes are taking place in single-family neighbourhoods: virtually all are *losing* population density, with one-to-two person households dominating. Empty nesters are a key demographic, dependent on driving and living in homes they've outgrown. While some are happy and have good incomes, many are socially isolated, challenged to take care of their homes, and unable to move to smaller, more accessible homes in their neighbourhood. By 2040, 50 per cent of all homes will be occupied by a solo resident. At the same time, missing middle housing, strip mall redevelopment and accessory dwelling innovations— senior-student homesharing, laneway homes, secondary suite management for seniors—have immense potential for reversing these problems, cutting transportation carbon and congestion and improving quality of life, safety, fiscal health and other community priorities. These solutions can and should be right-sized by neighbourhood and municipality.
5. **Connecting Big Urban Centres - Frequent Transit Corridor Focused Growth:** There is immense untapped potential for focusing growth along many major transit corridors that connect key urban centres. Currently, the smallest and slowest growing geography of all land use designations is Frequent Transit Development Areas (FTDAs). If greenfield development pressure is to be reduced, considerable work is needed to promote the designation and development of FTDAs, identifying and overcoming key barriers. TransLink's Transit Service Guidelines provide a solid basis to guide density targets but are only specified for bus routes. They should be expanded to rapid bus and SkyTrain.
6. **Greenspace Protection:** As noted, lightly populated, peripheral growth does not cover the costs to operate, maintain and replace its road, water, stormwater and sewage infrastructure, let alone pay its share of other municipal services. Furthermore, green areas within the Urban Containment Boundary are located on the urban edge, far from existing transit, services and employment lands. This form of growth is the region's single largest driver of passenger vehicle congestion and GHG growth. Phasing out development on farm, forest and ecologically significant land is vital for municipal fiscal sustainability, community prosperity and resilience to climate impacts. This may be the single most important big move!

Some sectors certainly need to be effectively engaged to consolidate support *and shape policy* to advance these win-win-win solutions for each and every municipality in the region, their residents, businesses and taxpayers. Solutions should consider diverse needs. Some home builders would have to shift a share of their business towards retrofits, infill and redevelopment. These solutions could involve new delivery models for some housing non-profits, e.g., managing secondary suites on behalf of seniors to provide affordable rental and address social isolation. TransLink could have multiple new roles, a partner in affordable housing and urban freight. With policy and practice innovation, the shift to more sustainable growth patterns can create opportunities for widespread winners.

Potentially, the only players that do not win—at least as much desired—are a few land holders and speculators. Beyond the loss of windfall profits, they, too, will win in multiple accounts, and most importantly so will their children! A course correction will also sustain many existing and new profitable niches in real estate development.

Good Densities: Good for Health, Mobility, Green Space, Private & Public Pocket Books

A low carbon urban region is more dense but it is not necessarily characterized by towers. **Europe's densest urban region barely has a building over eight storeys:** Barcelona. Metro Barcelona is similar in size to Metro Vancouver and has similar km length of rapid transit. **While Metro Vancouver has about 20% of its population within a km of rapid transit lines, Metro Barcelona has 60%. Metro Vancouver's transit mode share is ~20%. Barcelona's is ~60%. Barcelonians walk more, are growing vs shrinking their urban tree canopy and spend less publicly and privately on transportation.** Good densities are good for public health, green space and private and public pocket books! There is, nevertheless, a role for towers. Indeed, Metro Vancouver's predilection for ultra-high-cost rapid transit infrastructure (i.e. SkyTrain) and dominant low density urban form, almost requires towers to meet accepted standards, justifying these expenditures.

UNFAIR – YES AND COURSE CORRECTION BENEFITS FAR OUTWEIGH COSTS

Some municipalities may deem some of these win-win-win solutions as unfair because the long-term norm has been to incrementally develop farm, forest and environmentally sensitive land and extend the urban containment boundary as desired, even if other municipalities in the region are adversely impacted by increased congestion and reduced transit revenue. These have simply been deemed the costs of development. This is true. It is a bit unfair to change the rules. However, today, we have evidence that the costs outweigh the benefits. Municipalities are growing their long-run infrastructure deficits with this form of development. Congestion costs the region socially and economically billions. Municipal decisions—like many of society’s decisions—have inadvertently contributed to the largest and fastest growing sources of GHGs. The impact of singular climate change events to single communities can be billion-dollar catastrophic losses to property, infrastructure, lives, economic sectors and ecosystem services. All this, too, is unfair. Fortunately, the course correction is a long-term win-win-win solution for all municipalities. Making course corrections does, nevertheless, require some recalibration. Elected officials, nevertheless, are the only people capable of leading these major course corrections.

GOVERNANCE CONUNDRUM & CLIMATE COURSE CORRECTION

Many regional district and municipal elected officials and staff have conscientiously updated the Regional Growth Strategy, acknowledging shifting priorities and meeting the expectations necessary for adoption. They have succeeded. Metro Vancouver Regional District is functioning as designed. When Metro Vancouver was created a half century ago, these complex problems were not envisioned.

The threshold for Regional Growth Strategy adoption—unanimity—makes it immensely challenging to support the major course corrections needed to reach our shared vision, goals and targets. We are all aware of the urgent crises of affordability and climate change, and the reality of climate-related disasters having calamitous consequences to property, infrastructure, human life, economic activity and ecosystems.

Given the consequences we have witnessed to date and the trendlines we know, it is critical that member municipalities and the region lead a major course correction to realize its vision – a process that is likely to demand dialogue and creativity from all involved. This will involve challenging an institution whose very governance is inadvertently designed to set the region on a course to fail. Only elected officials can defy this current predisposition and drive this course correction.

Fortunately, this new direction also offers greater prosperity, including lower congestion and higher industrial and employment land outcomes and the lowest cost solutions to some of our highest priorities. Now is the time to reach for our goals, before they become impossible to reach.

REFERENCES

Renewable Cities (2021-2022). Metro 2050 Regional Growth Strategy Analysis: submissions, letters, presentations, briefs <https://www.renewablecities.ca/news-updates/making-metro-2050-matter-climate-congestion-affordability-prosperity>

ⁱ Metro Vancouver (May 25, 2021). *Memo to Regional Planning Committee, Subject: "Draft Metro 2050: Referral for Comment"* http://www.metrovancouver.org/boards/RegionalPlanning/RPL_2021-Jun-9_AGE.pdf#page=9

ⁱⁱ Metro Vancouver (2019). *Regional Tree Canopy Cover and Impervious Surfaces* <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/EcologicalHealth-TreeCanopyCoverImperviousSurfaces.pdf>

ⁱⁱⁱ Metro Vancouver (May 25, 2021). Ibid.

^{iv} Metro Vancouver (2019). Ibid.

^v Buildout Assumptions

2040 Population	2040 Households	2030 Driving Vehicle KMs/Year	2040 Driving Vehicle KMs/Year	2030 Tonnes Transportation Carbon/Year	2040 Tonnes Transportation Carbon/Year	2030 Urban Tree Canopy Loss Hectares	2040 Urban Tree Canopy Loss Hectares
150,000	65,000	650,000,000	1,040,000,000	205,000	230,000	1,500	3,000
Estimate based on development trends in similar MV undeveloped UCB (mainly low-density with some higher density as per MV projections).	Estimate of 2.3 household occupancy. (Larger households than MV estimates, due to higher single-family share also reduces GHG and driving projections.)	Estimate based on 50% buildout and a conservative estimate of 20,000 vehicle km travelled per HH per year based on similar geography.	Estimate based on full buildout and a steady reduction (25%) in vehicle km travelled of 16,0000 per HH for a similar geography.	50% build out x 6 tonnes per HH in semi-peripheral areas (30% less than current 9 tonnes in similar geographies assuming steady ZEV penetration). This would be a 4.66% increase in passenger vehicle GHGs over 2010 levels (4.4 million tonnes).	67,000 HH (full build out) x 3.5 tonnes per HH in semi-peripheral areas (60% less than current 9 tonnes in these areas assuming steady ZEV penetration). This would be a 5.25% increase in passenger vehicle GHGs over 2010 levels (4.4 million tonnes).	50% of Metro Vancouver Projection for 2040 in Urban Containment Boundary (5% reduction for the region) based on "Regional Tree Canopy Cover and Impervious Surfaces" study.	Metro Vancouver projection for 2040 in Urban Containment Boundary (10% reduction for region) based on "Regional Tree Canopy Cover and Impervious Surfaces" study.

^{vi} BC Ministry of Municipal Affairs. Community Lifecycle Infrastructure Costing "CLIC" tool, guide with pilot community meta analysis and case studies: https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/local-governments/planning-land-use/clic_decision_support_tool_user_guide.pdf

^{vii} Ibid.

^{viii} **IPCC statement in Assessment Report Five, Mitigation Working Group, 2014:**
Thousands of cities are undertaking climate action plans, but their aggregate impact on urban emissions is uncertain... Current climate action plans focus largely on energy efficiency. Fewer climate action plans consider land use planning... Effective mitigation strategies involve packages of mutually reinforcing policies, including co-locating high residential with high employment densities, achieving high diversity and integration of land uses, increasing accessibility and investing in public transport...

IPCC statement, Special Report on Global Warming of 1.5°C, 2018
effective urban planning can reduce GHG emissions from urban transport between 20% and 50%