How local governments in one region made the leap… and others followed

URBAN REGIONS

A best seller Metro Vancouver is writing through its Climate 2050 Plan

Alex Boston
Executive Director
Select Chapters....

- Prologue
- 1. Housing: Hidden Solutions
- 2. Transportation: Mind the Gap
- 3. Energy Supply: Junk to Jewels
- Epilogue
*PROLOGUE*

**Metro Vancouver**

- **GHG Activity**
- **GHG Target**

**Big Sector Trends**
- **31% CARS AND TRUCKS**
- **26% BUILDINGS**

**Graph**

- X-axis: Years from 2008 to 2020
- Y-axis: Millions of Tonnes of GHGs

- Line graph showing decreasing GHG activity and GHG target from 2008 to 2020.
CHAPTER 1
HIDDEN HOUSING SOLUTIONS
Single Family Home Occupancy 2016
3 Rs for Single Detached Homes: Re-imagine, Retrofit, Renovate, Rebuild!

1960’s Home

Classic Energy Retrofit

Classic Retrofit + Suite/Strata Coach

Retrofit, Secondary Suite/Strata + Coach

New Single Detached Home or “Homeplex”

**Canadian national average existing building

Occupancy

Affordability / Person

GHG Tonnes / Person / Year***

Affordability / Person

Boston Consulting: Policy Design
Illustrations by UBC CALP
10% New Secondary Suites in BC’s Single Family Stock =

- 250,000 tonne reduction
- 85,000 new housing units + 85,000 single family households w more revenue
- 10’s of 1000s solos w less social isolation

10,000 single family homes
## LOCAL + SENIOR GOVERNMENT POLICY INNOVATION

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<th>Senior Governments + Utilities</th>
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<td><strong>New Secondary-suite-ready homes, coach homes, “homeplexes”</strong></td>
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*Image: [Image 54x59 to 207x163](image), [Image 54x262 to 206x366)](image)*
Sustainable Transportation Pillars

1. Vehicle Efficiency
2. Renewable Fuels
3. Travel Distance Management
4. Modal Shifts

CHAPTER 2
TRANSPORT: MIND THE GAP

Technologies
Sr Government

Integrated Land Use, Transportation + Pricing
Local Government
GHGS PER NEW HOUSEHOLD
GREATER GOLDEN HORSESHOE

TOP COMMUNITY GHG DETERMINANTS
- Proximity to employment hub
- Neighbourhood + housing type
  - Proximity to good transit

Map: Renewable Cities + Licker Geo, 2018
HIGH CARBON, HIGH COST GROWTH

Low-Density, Outer Ring vs Smart Growth Households

- Two to three-fold higher GHGs (Boston Consulting meta analysis)
- Two-fold higher civic infrastructure burden (BC Ministry of Community Development, 2014)
- Two-fold higher transport costs, driving distances, travel times (Metro Van, 2015)
- Majority are overweight based on walkscores (Coastal and Fraser Heath Authorities, 2015)
  - #1 driver of farm land loss (Statistics Canada, 2014, 2017)
- 70% of current of pop, 75% of current growth in Metro Van (David Gordon, 2011)
REGIONAL TRANSIT PLAN

Greater Vancouver Personal Transportation GHGs

Inventory (BC Government)
Projection with $8.5B Mayors’ Vision Transit Plan (TransLink)
Projection without Mayors’ Vision (TransLink)
GHG Targets (BC Gov, Metro Vancouver, TransLink)
INVESTMENT COST EFFECTIVENESS

Source: TransLink, 2014

Bubble size is proportional to cost

Driving Distance Reduction (VKT)

Transit/Active Travel Mode Shifting

Source: TransLink, 2014
LAND USE SOLUTIONS

- **Growth Location**
  - Focus mixed use growth
    1. city + town centres, prioritizing those proximate to employment centres
    2. high priority transit corridors, notably existing + new rapid transit
  - Strengthen major employment centres
  - Phase out res + job growth beyond hubs, nodes + corridors

- **Growth Form**
  - High density in major transit hubs
  - Medium density in most nodes + corridors
  - Strengthen park, urban forest, permeability
  - Gentle intensification in general urban around hubs, nodes, corridors

- **Transportation Investment Priorities**
  - Focus on high priority, high impact corridors
  - Active travel in hubs, nodes, key corridors

OUTCOMES

- **Effective congestion management**
- **Reduced transpo costs** (personal + public)
- **Reduced civic infrastructure costs**
- **Strengthened urban competitiveness**
- **Reduced physical inactivity + obesity**
- **Agricultural development**
- **Better ecosystem services**

And...

- Transport + housing GHG reductions
- Forest + farm carbon protection
- Extreme precipitation + heat resilience
- Many agencies use similar thresholds for transit infrastructure planning.
- High rises are not essential to justify the most expensive infrastructure. Low rise/townhouse densities are sufficient.
CHAPTER 3

JUNK TO JOULES: RENEWABLE NATURAL GAS

Organic Waste Per Yr
~500,000 tonnes

Renewable Natural Gas
~1,000,000 GJ
(10,000 Homes)

Compost
~200,000 tonnes

GHG Reduction
~100,000 tonnes

Surrey Biofuel Facility Precedent
1. Target/Policy/Plan Alignment
2. Governance Enhancement
   1. Local
   2. Multi-Level (local, provincial, federal)

EPILOGUE

Organizational + Urban "Greatness"

GHGs

Alex Boston
Executive Director

GHGs