

Positioning Nanaimo to address Climate Change

TABLE 2: CLIMATE CHANGE GOALS AND OBJECTIVES FOR CANADA

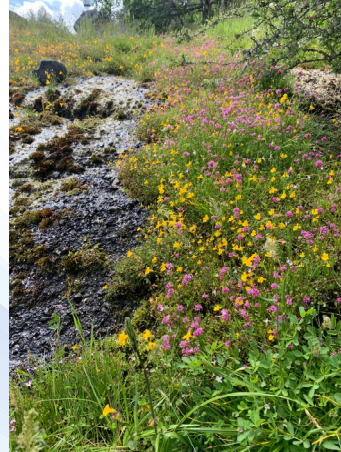
| GOALS | OBJECTIVES |
|---------------------|----------------------------|
| Thriving Canadians | Healthy Canadians |
| | Resilient Canadians |
| | Sustainable Ecosystems |
| | Intergenerational Fairness |
| Economic Prosperity | Low-Carbon Competitiveness |
| | Climate Resilience |
| | Cost-Effectiveness |
| Global Action | Global Emission Reductions |
| | Policy Spillovers |
| | Technology Spillovers |

- Pandemic Recovery
- Remote Working
- Ex-urban migration
- Affordable Housing
- Fuel switching
- Green Infrastructure

(From Charting our Course, Canadian Institute for Climate Choice, 2020)

Focusing Areas of Environmental Concern?

- Climate Mitigation: GHG targets and trends
- Climate Adaptation: flood / rainfall / drought / heat / slope stability
- Watersheds: water quality and quantity
- Habitat conservation and restoration
- Urban forest and vegetation cover / urban agriculture



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Reframing Environmental Concern?



- **Attractive Mobility Hubs and Nodes**
 - Walk to work, recreation and culture
 - Vehicle Charging, cycle parking
 - Longer commuter e-bike, transit connections
- **Green and complete neighborhoods**
 - Support gentle densification and housing diversity
 - rainwater management and water conservation
 - Encourage habitat restoration and local food production
- **Nanaimo Pride of people and place**
 - Housing and social support
 - Manage for wildfire interface risk
 - Invasive species management (Volunteers in Parks / stewardship)



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WHAT IS THE REGIONAL GROWTH STRATEGY?



- **Agreement** between municipalities and electoral areas on how growth is managed

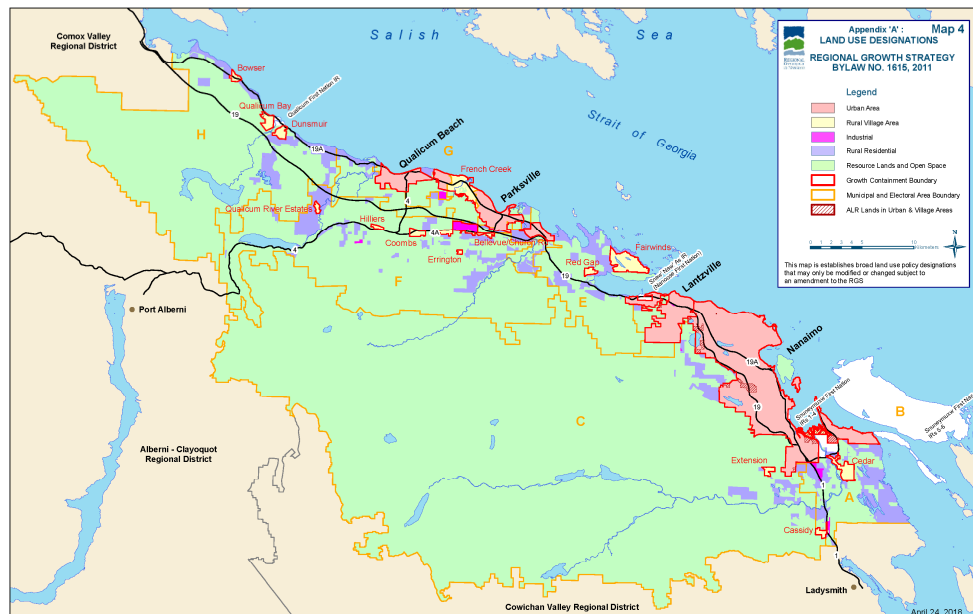
Establishes a **vision** of how the RDN is to grow

Sets **goals** and **policies**, as well as **targets** to monitor progress.

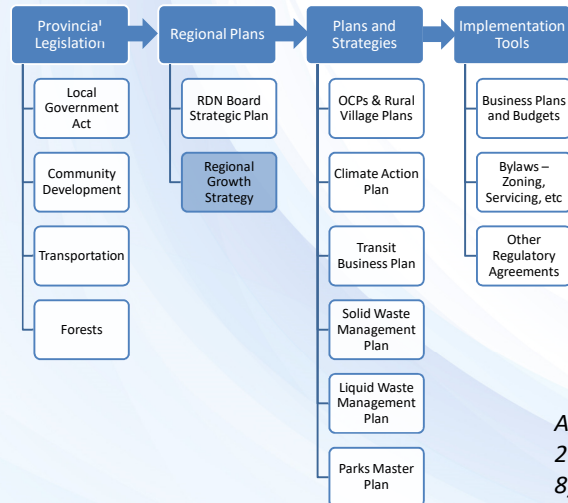
Adopted by **bylaw** of the RDN Board

Current RGS adopted in 2011

www.rdn.bc.ca/regional-growth-strategy



REGIONAL GROWTH STRATEGY IN CONTEXT



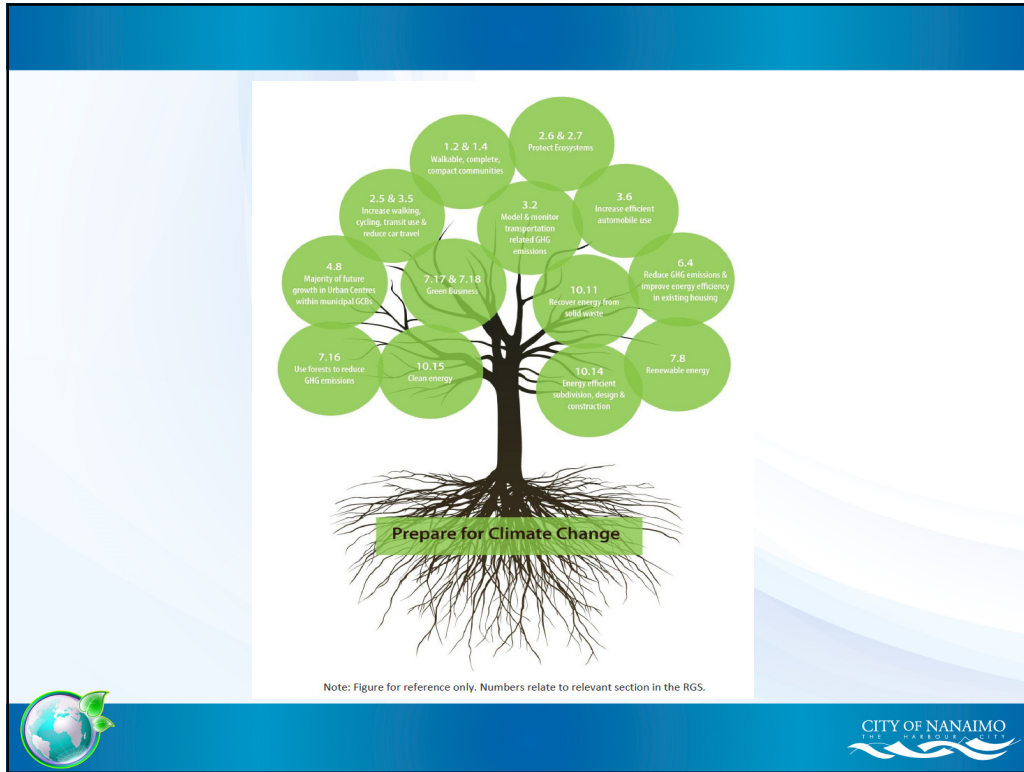
Adapted from Figure 2 of the RGS (page 8)




WHAT ARE THE CLIMATE BENEFITS?

- Directing the majority of growth inside the Urban Containment Boundary and reducing GHGs emissions from the need to drive.
- Locating housing, services and amenities in compact urban areas allows for active transportation options without the need to drive.
- Encourages greater housing diversity within the urban containment boundary.
- Encouraging water-efficient, energy-efficient, and more sustainable subdivision and development.
- Conserving lands outside the urban containment boundary for:
 - agricultural, forestry lands
 - recreation and environmental protection purposes









Nanaimo has committed to:

- Reduce greenhouse gas emissions **50%*** from 2010 levels by 2030
- Reduce greenhouse gas emissions **94%*** from 2010 levels by 2050

* 50 to 57% by 2030, 94 to 107% by 2050
Climate Emergency Declaration, April 2019

What causes Nanaimo's emissions?

Burning of fossil fuels by residents is primary driver:

- gasoline/diesel for vehicles
- natural gas/oil for heating/hot water






Nanaimo's climate policies

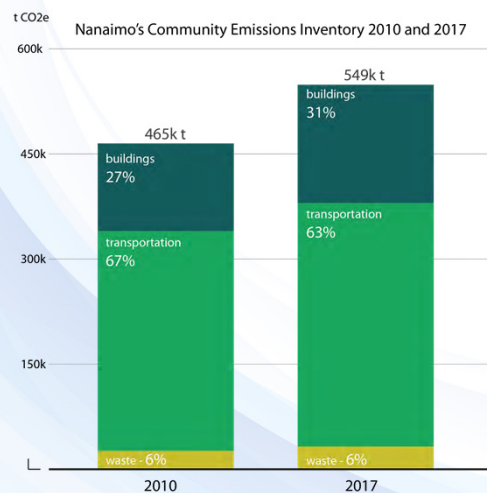
- ❑ 2008 OCP had policies to reduce energy use
- ❑ 2010 GHG targets of **33% reduction by 2020** from 2007
- ❑ Community Sustainable Action Plan (2012) suggested policies and indicators
- ❑ Transportation master plan describes a multi-modal vision of transportation
- ❑ Parking bylaw introduced EV charging requirements for new construction
- ❑ Energy Step Code Implementation Strategy (2018) for increased energy efficiency for new buildings
- ❑ Rezoning policy incentivizes exceeding Energy Step with density bonus points. Rezoning policy under review re additional Energy Step Code requirements
- ❑ City promotes the Clean BC top-up incentives for home or work/apartment EV charging stations, and EV purchase incentives



But emissions are still rising.

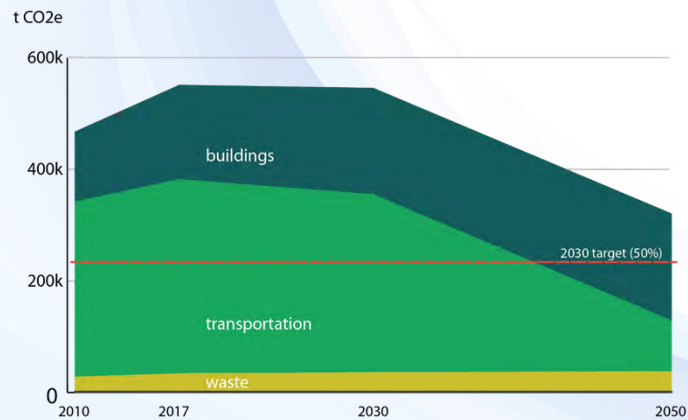
In 2010, council set a target of 33% reduction in emissions by 2020.

Emissions in 2017 increased **18%** since 2010.



Current policy and planning is not enough.

BAU modeling projects a 32% reduction from 2010 GHG emissions by 2050.



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How do we reduce GHG emissions?

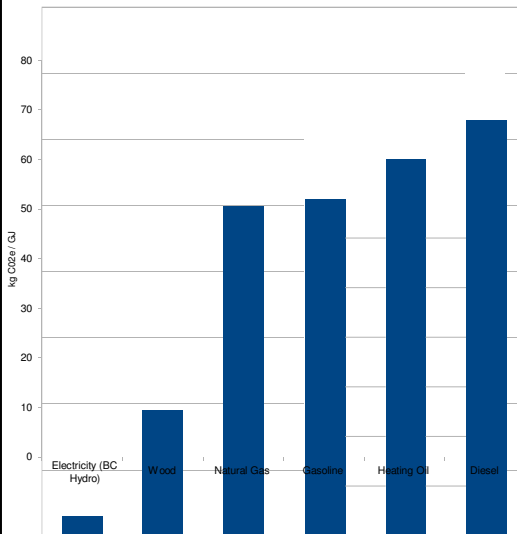
Increase efficiency / reduce demand

Switch to zero-carbon energy sources



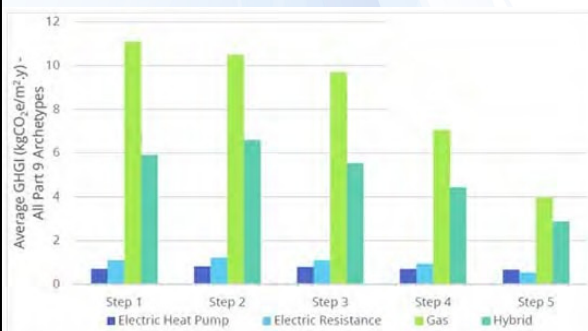
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Carbon Emissions of Common Energy Sources



Fuel switching is key

While increased efficiency reduces fuel demand, it is unlikely to produce dramatic drops in GHG emissions quickly enough to reach targets.



Part 9 - GHG Intensity by Mechanical System (average across all archetypes)

Source: Integral Group, Implications of the BC Energy Step Code on GHG Emissions June 2019

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Renewables don't always reduce GHG emissions.

Nanaimo has access to low-emission hydroelectricity

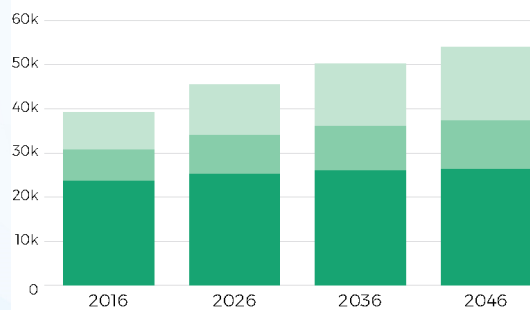
Replacing grid electricity with renewables in BC doesn't significantly reduce GHG emissions



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Residential unit mix

■ single detached ■ other ground ■ apartment



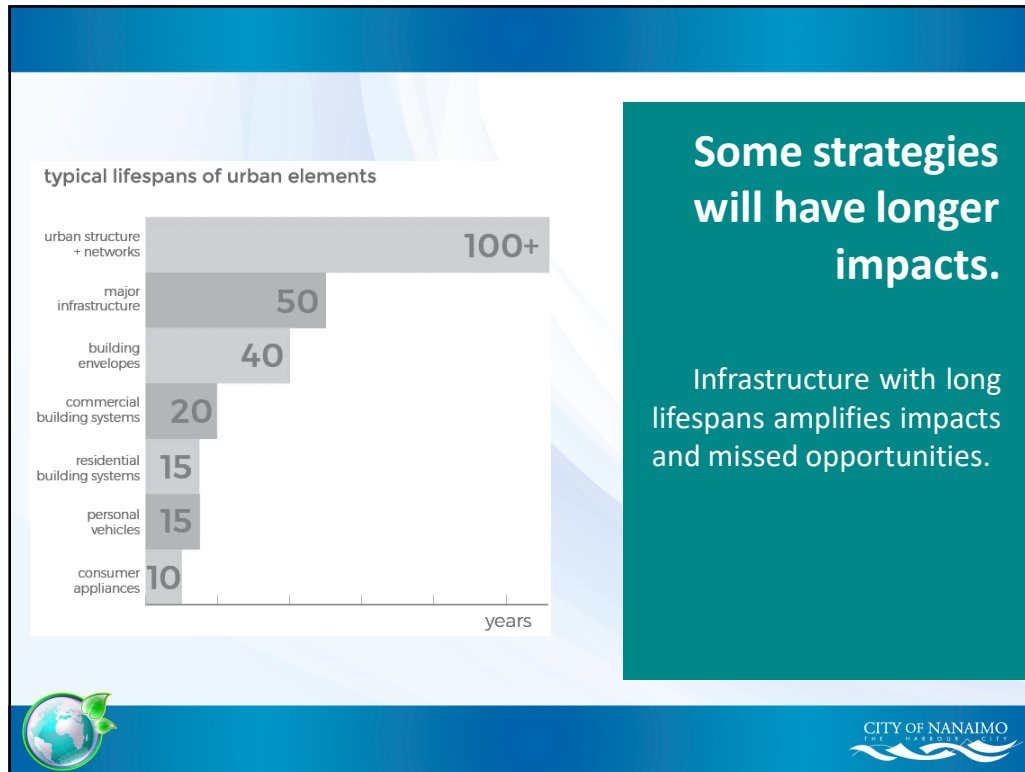
Source: Vann Struth Consulting, City of Nanaimo Population, Housing & Employment Projections, June 2020

**~60% of buildings
in 2050 have
already been built.**

75% of 2050 buildings will
be built before 2032 Net-
zero building code is
implemented.



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RETROFITS



Possible GHG Options

- Education
- Increase Incentives
- Target Oil Heating
- Provide financing for upgrades






NEW CONSTRUCTION STEP CODE



**BC Energy
Step Code**



Possible GHG Options

- Increase Energy Step Code Requirements
- Add GHG intensity alternative pathway
- Density bonusing for zero carbon buildings






ELECTRIC VEHICLES



Possible GHG Options

- Improve public charging infrastructure
- Target charging investments for buildings that are expensive to upgrade
- Increase EV charging requirements in new construction




WASTE REDUCTION




Possible GHG Options

- Waste reduction programs
- Continue to improve organic waste diversion
- Explore integrated waste management for reducing GHG emissions from waste



ACTIVE TRANSPORTATION





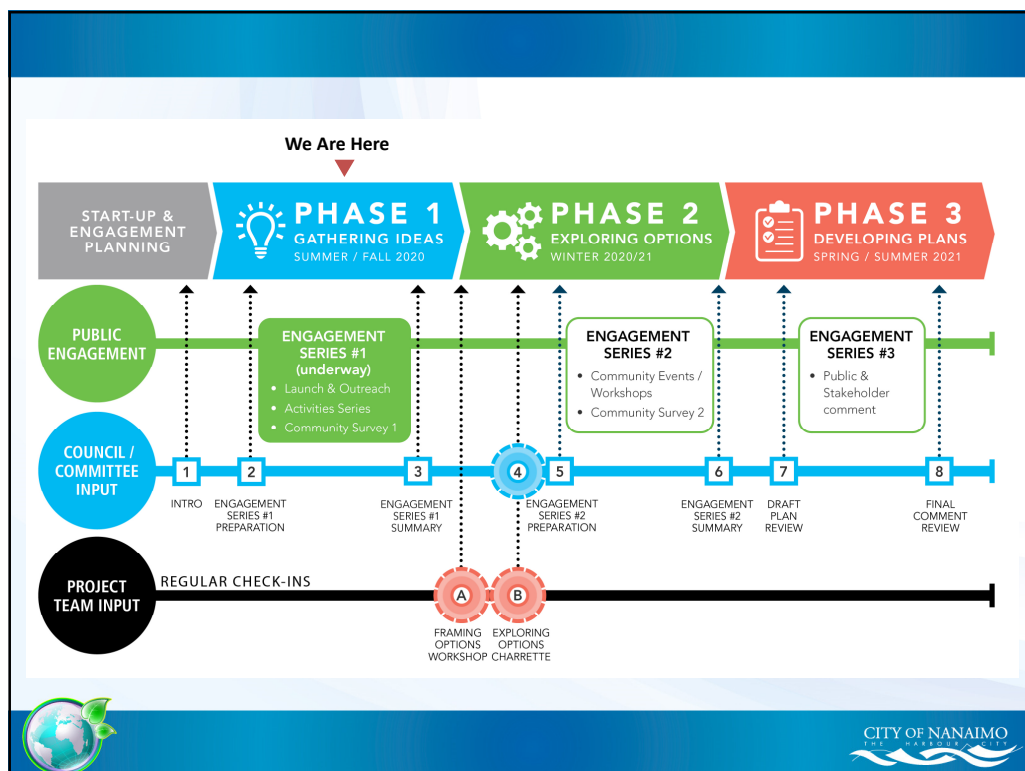
Possible GHG Options

Increasing investment in active transportation infrastructure

focus development in nodes and corridors to reduce need for driving

Investigate e-bike infrastructure needs








THANK YOU!



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2019 Summary of Indicators

| Goal 1: Prepare for Climate Change & Reduce Energy Consumption | | |
|---|---|--------------------------|
|  | #1 Total community greenhouse gas emissions | Data last available 2012 |
| | #2 Per capita non-renewable energy use | |
| | #3 Total community energy use | |
| Goal 2: Protect the Environment | | |
|  | #4 Total water consumption | Moving Towards |
| | #5 Surface water quality (community watershed monitoring) | Stable |
| | #6 Amount of land in protected areas | Moving Towards |
| Goal 3: Coordinate Land Use & Mobility | | |
|  | #7 Number of households within a set distance (400 m) of employment lands, shopping, schools, transit and recreation facilities | Moving Towards |
| | #8 Per capita transit use | Moving Towards |
| Goal 4: Concentrate Housing & Jobs in Rural Village & Urban Growth Centres | | |
|  | #9 Population inside and outside the Growth Containment Boundary | Moving Towards |
| | #10 Density of dwelling units inside and outside the Growth Containment Boundary | Moving Towards |
| | #11 Diversity of land use (ratio) inside the Growth Containment Boundary | Moving Towards |
| Goal 5: Enhance Rural Integrity | | |
|  | #12 The number of new lots/units created through subdivision inside and outside the Growth Containment Boundary | Moving Towards |
| | #13 Number of parcels with Farm Status | Moving Towards |
| | #14 The amount of land classified as Private Managed Forest Land | Moving Away |

| | | |
|---|---|----------------|
| Goal 6: Facilitate the Provision of Affordable Housing | | |
| | #15 The total number of rental units affordable to households with income below fifty percent of the median income for the region | Moving Away |
| | #16 The portion of units in each housing type inside the Growth Containment Boundary (diversity of housing types in the Growth Containment Boundary) | Moving Towards |
| Goal 7: Enhance Economic Resiliency | | |
| | #17 [(Unemployment) Employment rate and labour participation rate] | Moving Towards |
| Goal 8: Enhance Food Security | | |
| | Number of parcels with Farm Status | Same as #13 |
| Goal 9: Celebrate Pride of Place | | |
| | #18 The amount of publicly owned land designated for parks and community use (including land in protected areas, community use parks, and recreational facilities such as pools, ice rinks, etc.) | Moving Towards |
| | #19 Per capita length of maintained public trails (including trails, paths, laneways) | Moving Towards |
| Goal 10: Efficient Services | | |
| | #20 Per capita waste disposal | Moving Away |
| | #21 Per capita cost to provide water and sewer systems | Moving Away |
| | #22 Per capita length of roads (length of paved roads per person) | Stable |
| Goal 11: Cooperation Among Jurisdictions | | |
| | Cooperation among jurisdictions | Moving Towards |



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