




WELCOME!
Environment
Committee
2021.07.14

reimagine
NANAIMO

Our City, Our Choices.

Discussion of Climate Action
Emerging Options

Environment Committee
Wednesday, July 14, 2021



Today's Agenda



- 15 min Process and Context
 - Upcoming Scenario Review Engagement - workshops
 - City Plan (OCP+ high level document) plus Implementation Action Plans
- 90 min GHG Action Emerging Options for discussion
- 15 min Next Steps: Prep for Environment and Climate Resilience Emerging Options



Process & Context

Where are we now?
Where are we going?

Process Overview

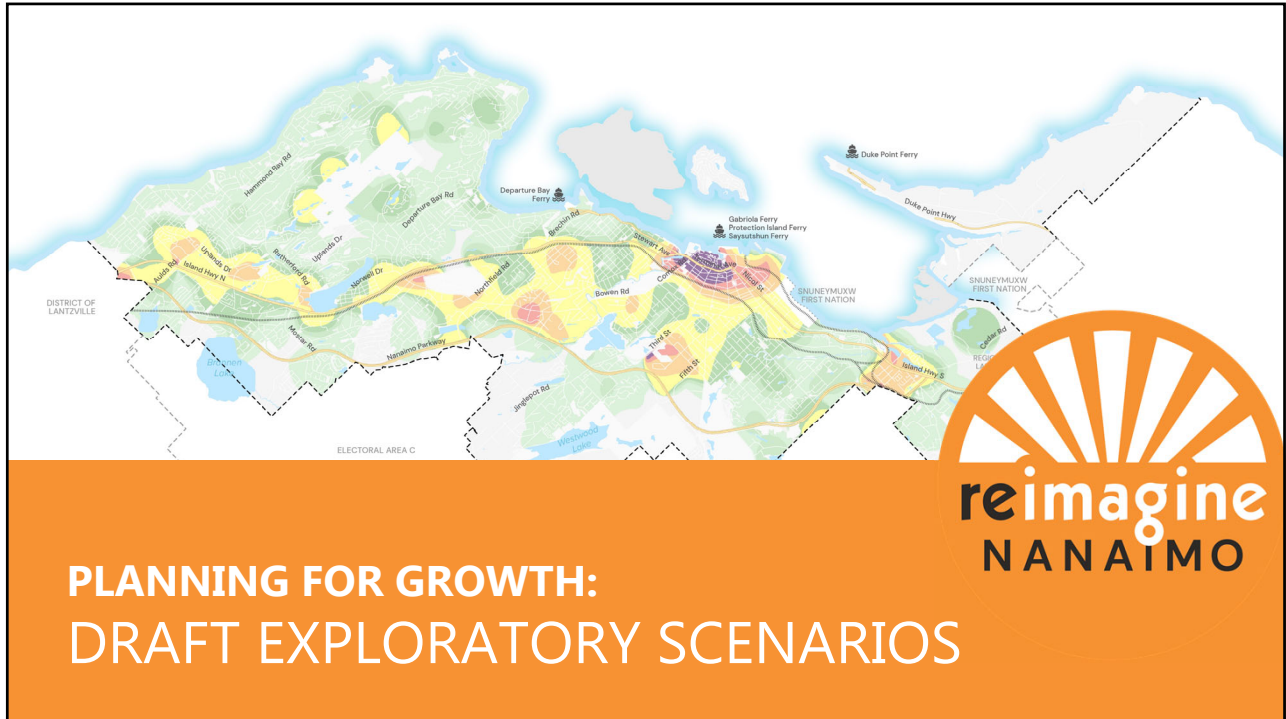


WE ARE HERE!



Where We're Going

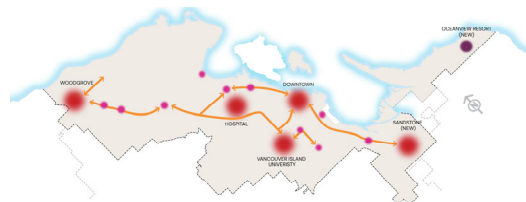




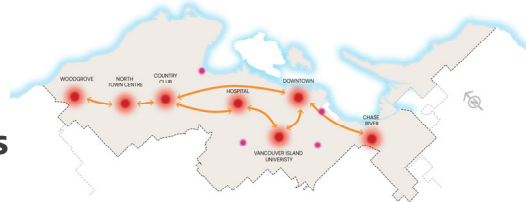
**3 Draft
Scenarios
an overview**



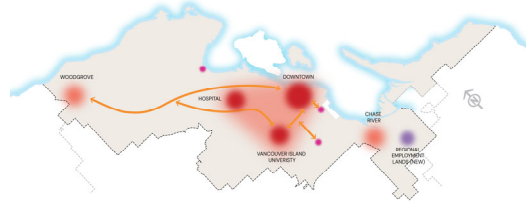
Scenario 1:
Current Path

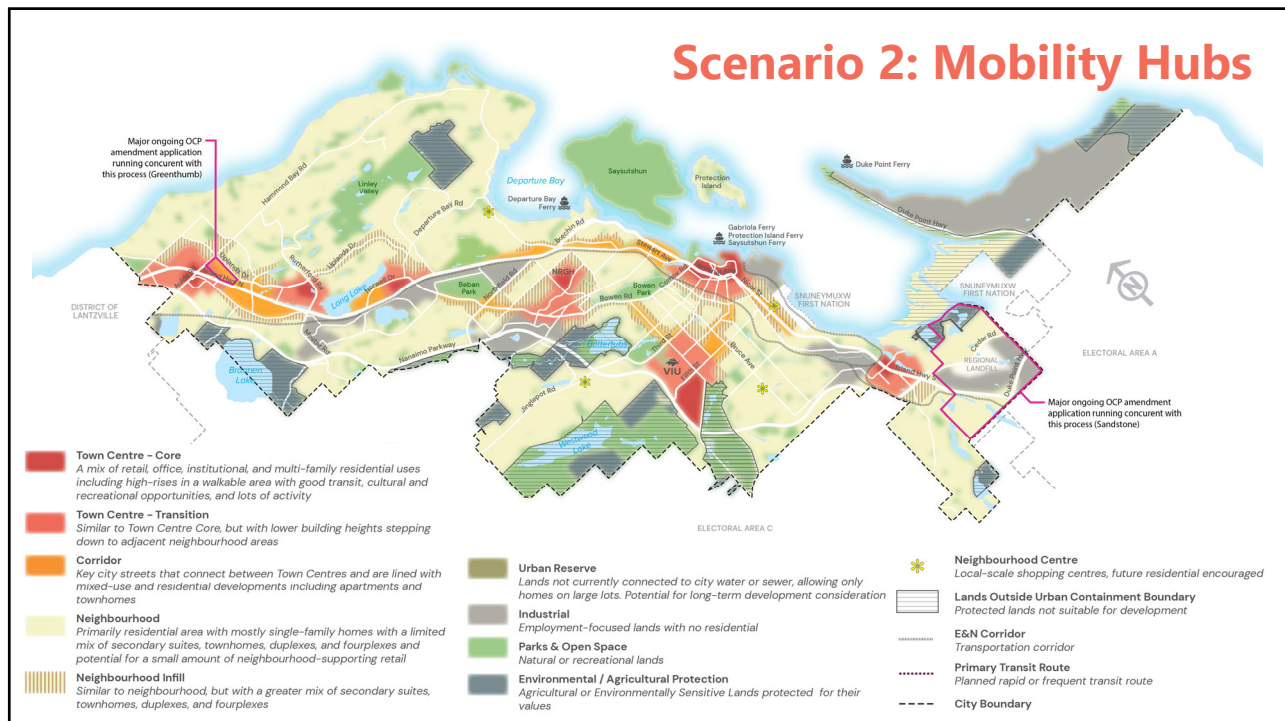
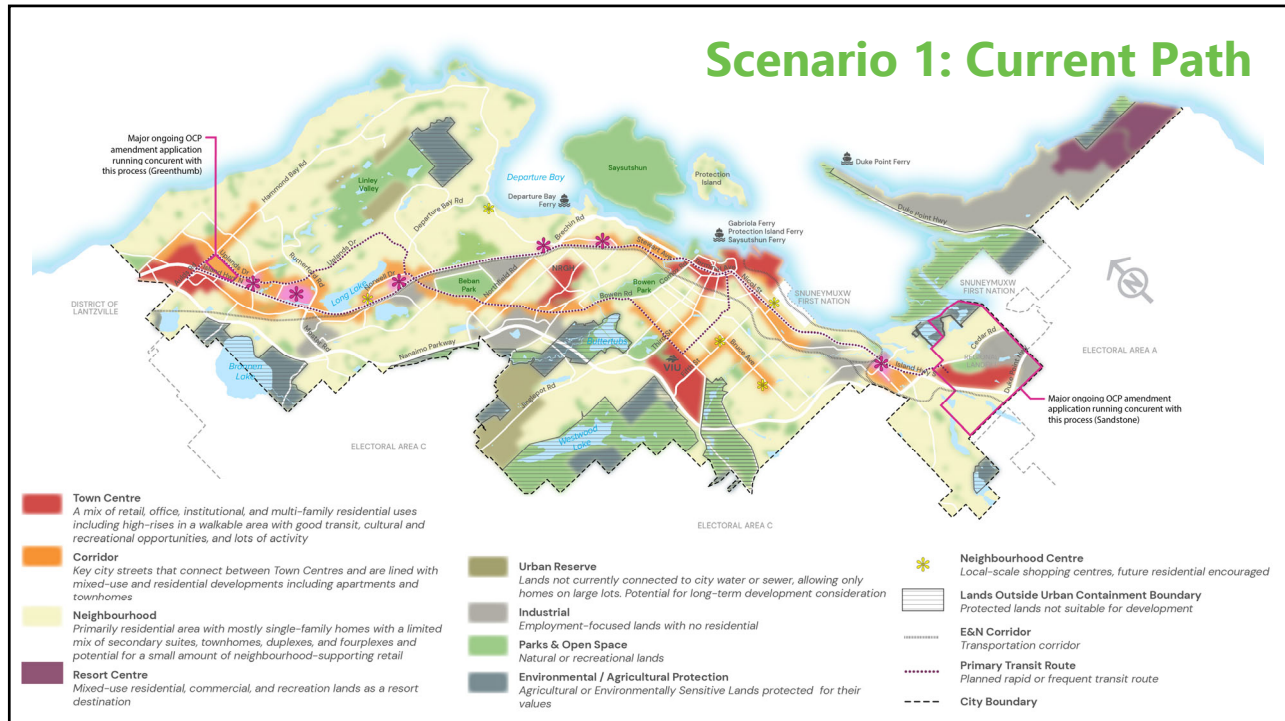


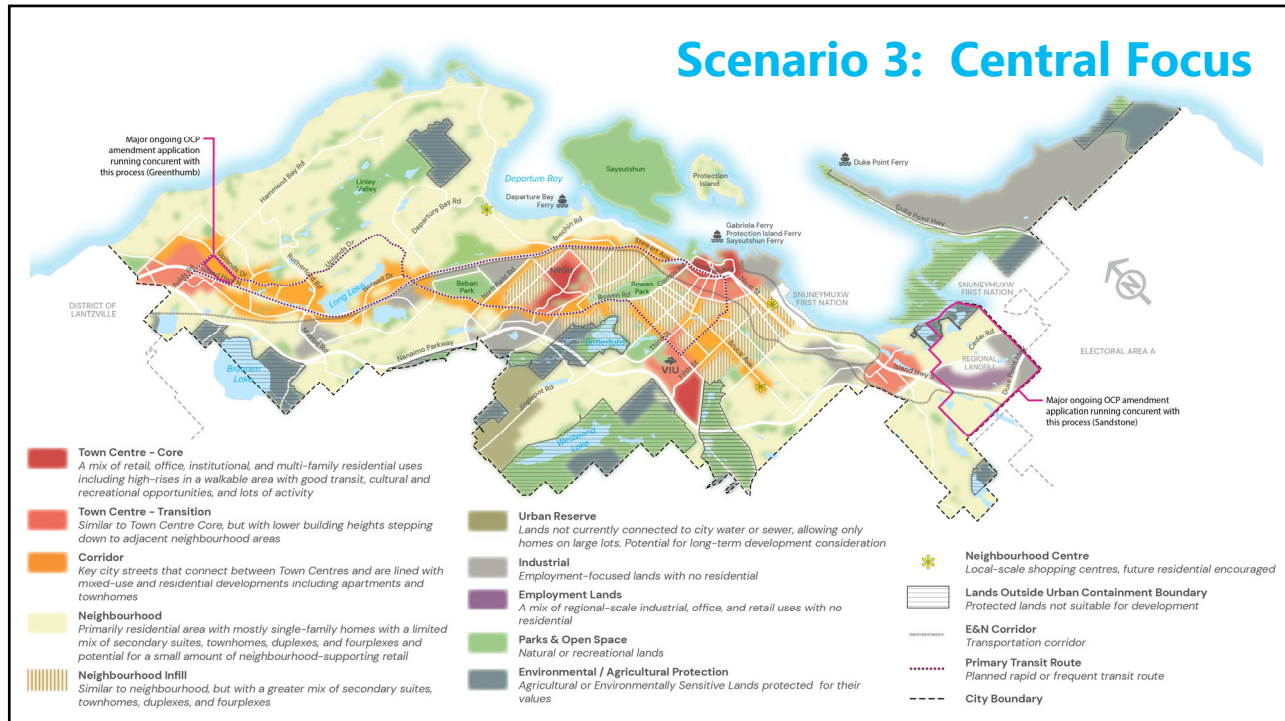
Scenario 2:
Mobility Hubs



Scenario 3:
Central Focus







Greenhouse Gas (GHG) Emerging Options

reimagine Nanaimo

July 14 2021

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



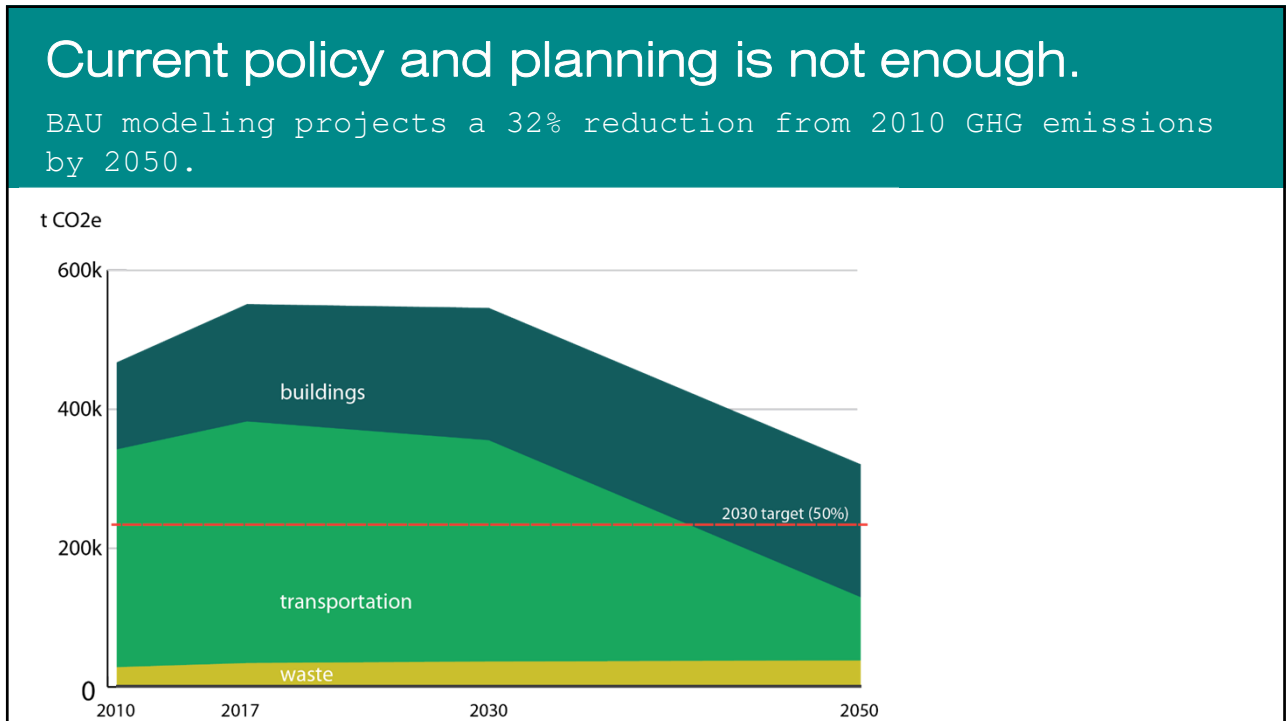
While BC has committed to:

Reduce greenhouse gas emissions **40%*** from 2007 levels by 2030

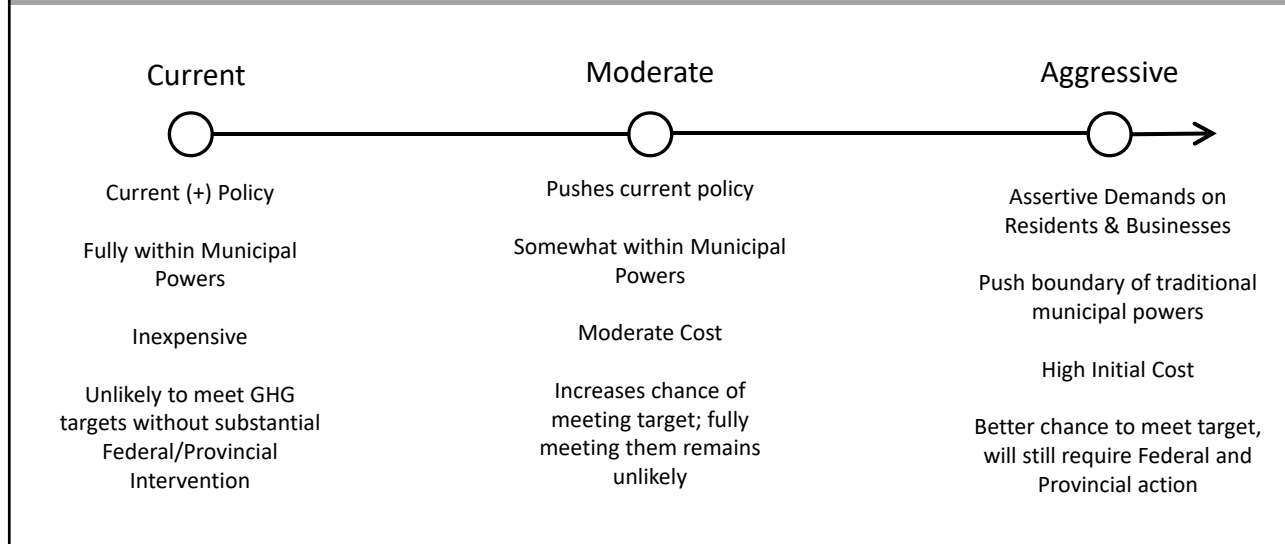
Reduce greenhouse gas emissions **80%*** from 2007 levels by 2050

* 50 to 57% by 2030, 94 to 107% by 2050





How Aggressive does Nanaimo want its GHG policies to be?



What causes Nanaimo's emissions?

Burning of fossil fuels by residents is primary driver:

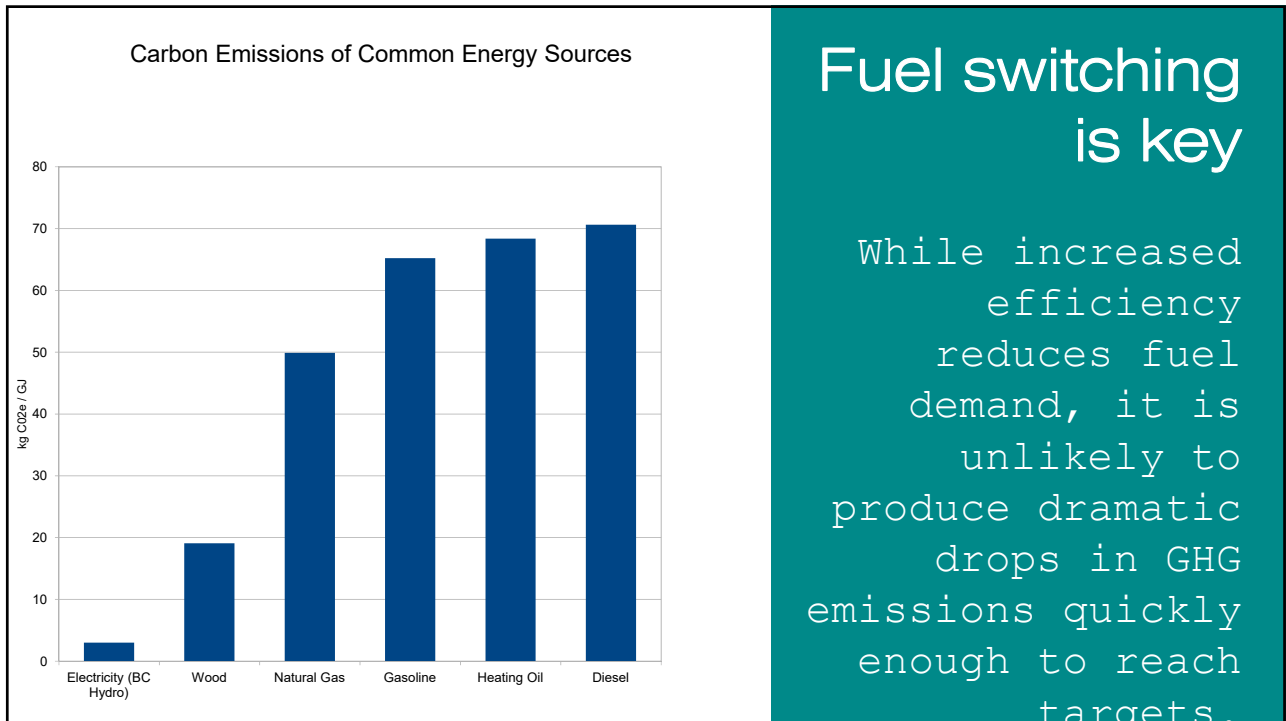
gasoline/diesel for vehicles

natural gas/oil for heating/hot water



What causes Nanaimo's emissions?

$$\text{GHG Emissions} = \text{Energy Demand} \times \text{Efficiency} \times \text{Carbon Intensity of Fuel}$$



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.

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



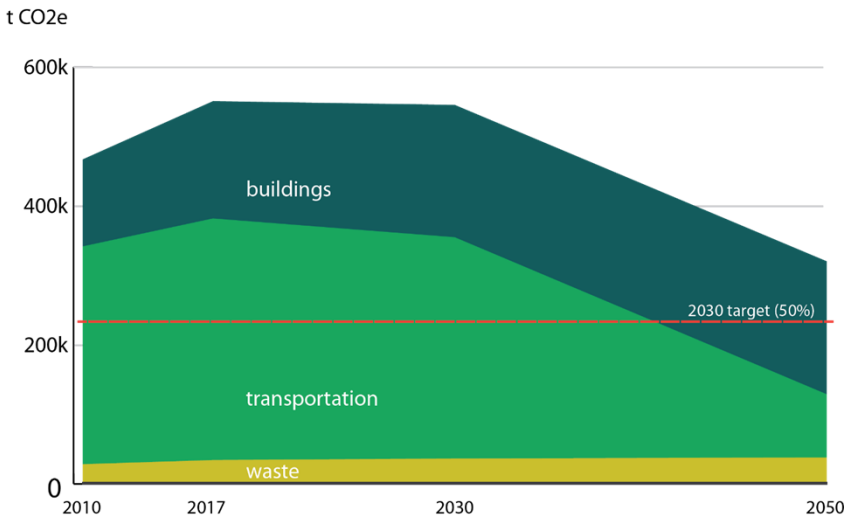
Discussion on possible policy options



 NEW CONSTRUCTION	 RETROFITS	 ELECTRIC VEHICLES	 ACTIVE TRANSPORTATION	 WASTE REDUCTION
				

Buildings

Business as Usual



Assumes buildings built after 2032 are Net Zero (BC Commitment)

In 2050, 11% of building emissions are from new buildings built between 2021-2032

In 2050, 89% of building GHGs are from buildings already built in 2021

Scenario Impacts

Emissions from Buildings



Scenario 1: Current Path



- Continues existing trend of focusing growth in more higher density building types

Scenario 2: Mobility Hubs



- Multi-family building types more likely to be wood-frame/mass timber than Scenario 3 (less embodied emissions)
- More redevelopment of existing buildings, reducing need to retrofit them

Scenario 3: Central Focus



- Highest density buildings
- May have higher embodied emissions
- May have opportunities for district energy



NEW CONSTRUCTION





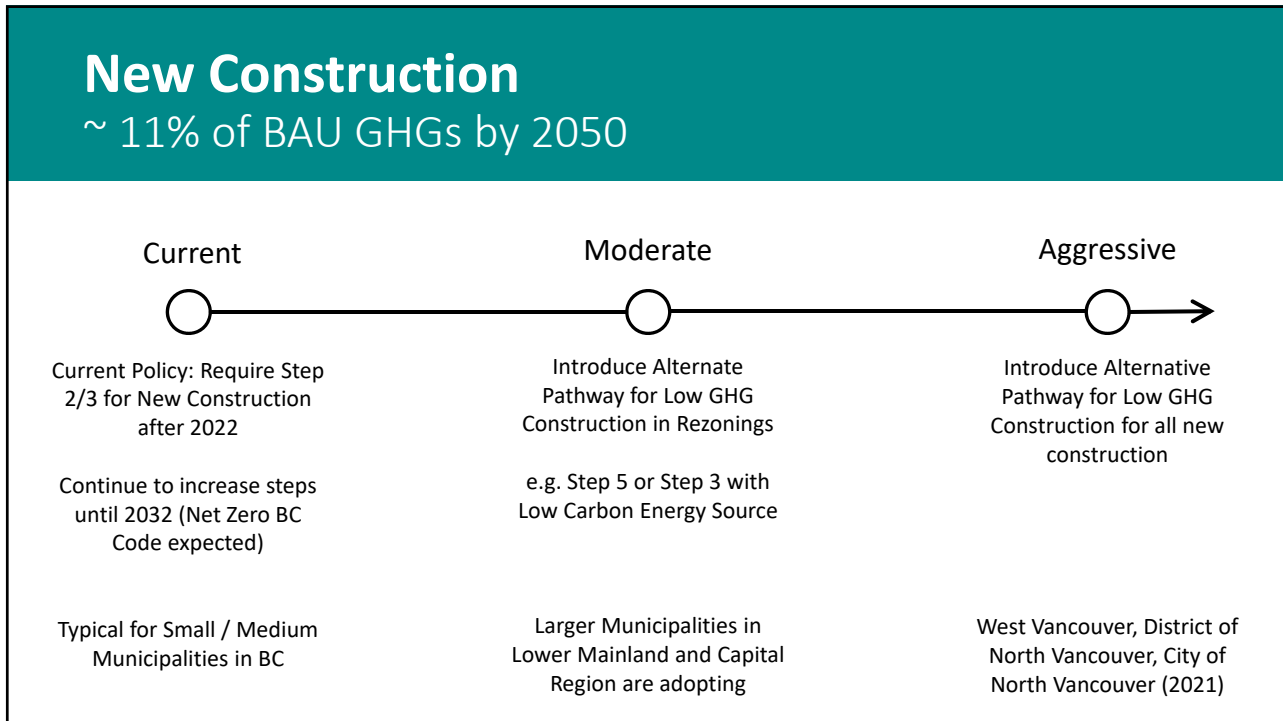

BC Building Code Net Zero by 2032

10,000 new units expected before 2032

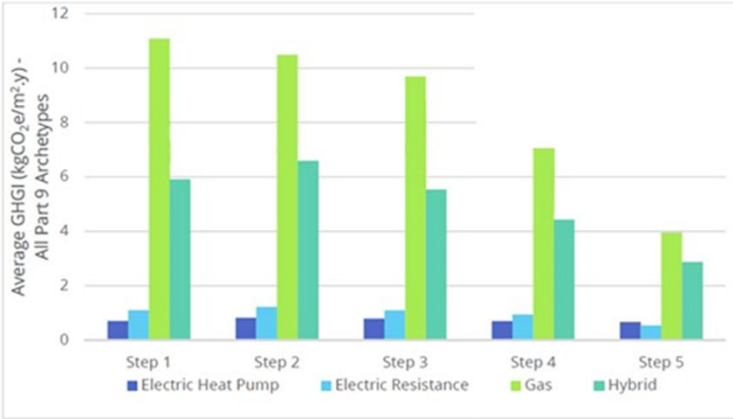
85%+ use natural gas

Nanaimo's Step Code requires 10-30% more efficient than BC Building Code

All buildings being built now will need to be retrofitted by 2050 to reach target



Alternative Pathway for Low Carbon Systems



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



RETROFITS



>65% of existing building stock will still exist in 2050

Current trends see electric baseboard replaced by natural gas, increasing GHG emissions

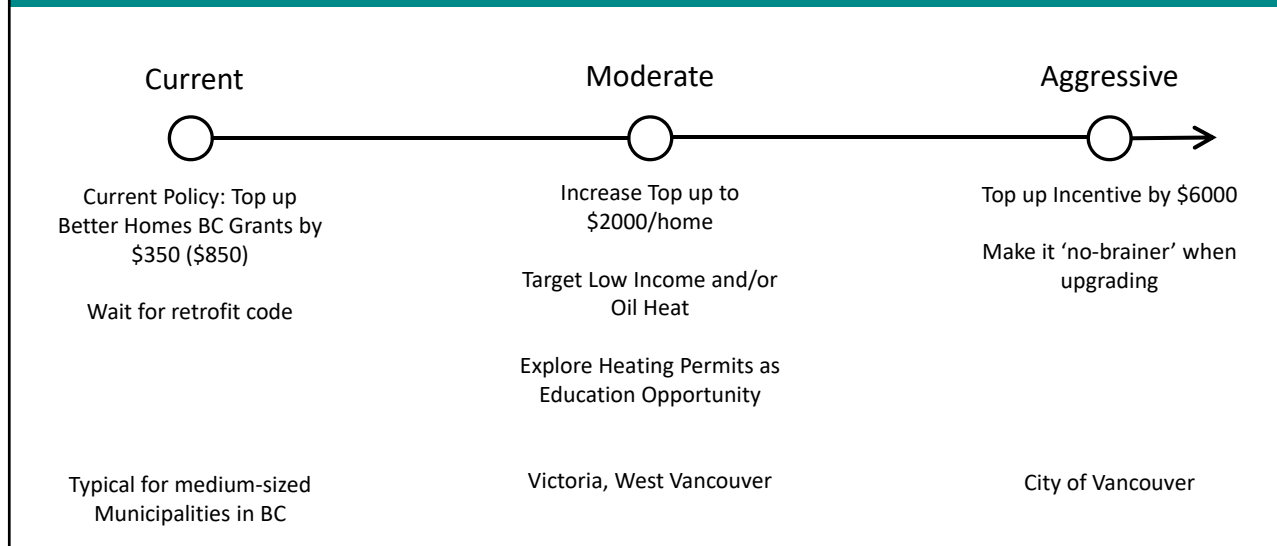
Difficult for local governments due to limited powers

Education and Incentives are key

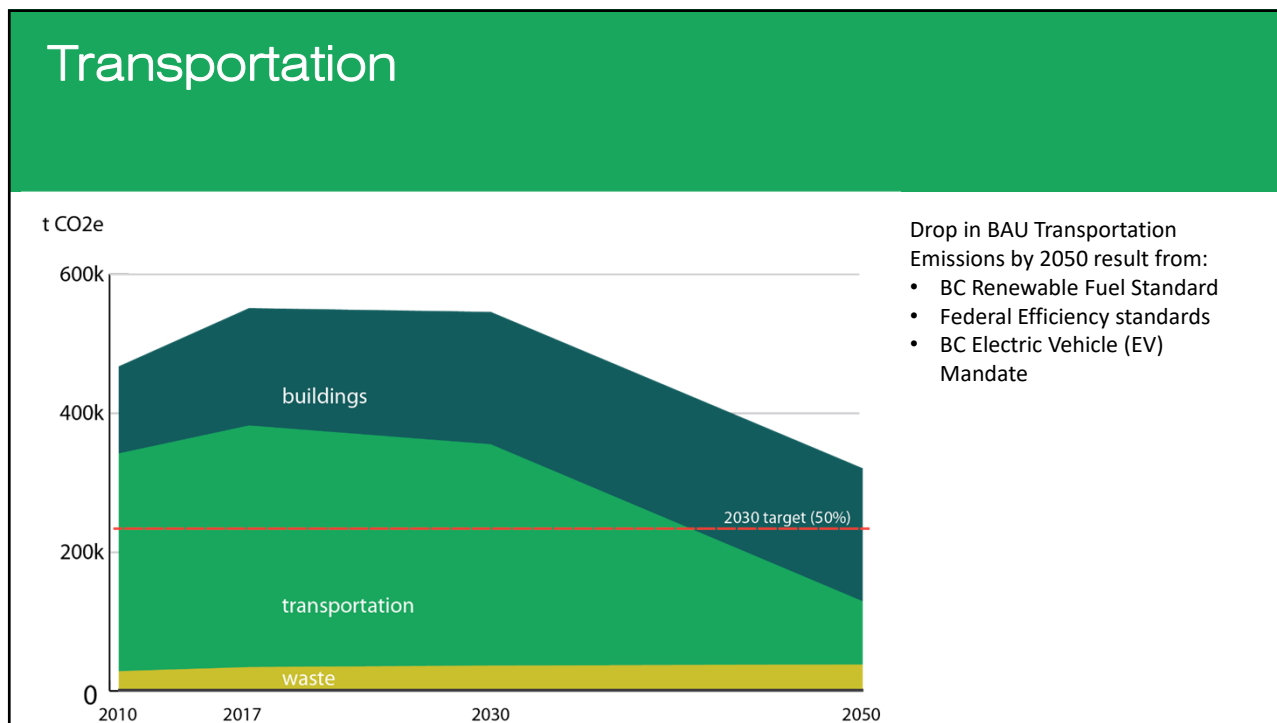
To meet 2030 targets, ~ 25% housing units need to have fossil fuel systems replaced with zero carbon system

Retrofits (Existing Buildings)

~ 39% of BAU GHGs by 2050



Transportation



Scenario Impacts Emissions from Transportation



Scenario 1: Current Path



Scenario 2: Mobility Hubs



Scenario 3: Central Focus



- Builds on existing policies and trends
- Moderate densification along corridors and town centres occurring to support shifting historic patterns of dispersed homes and services that encourage vehicle trips
- Services distributed across hubs; may reduce transportation demand by locating daily needs near more homes (including those already existing) allowing for more biking/e-bikes and transit
- Concentrated services, jobs and homes in centre
- May lower vehicle trips for residents of centre
- May result in more vehicle usage for others

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ACTIVE TRANSPORTATION



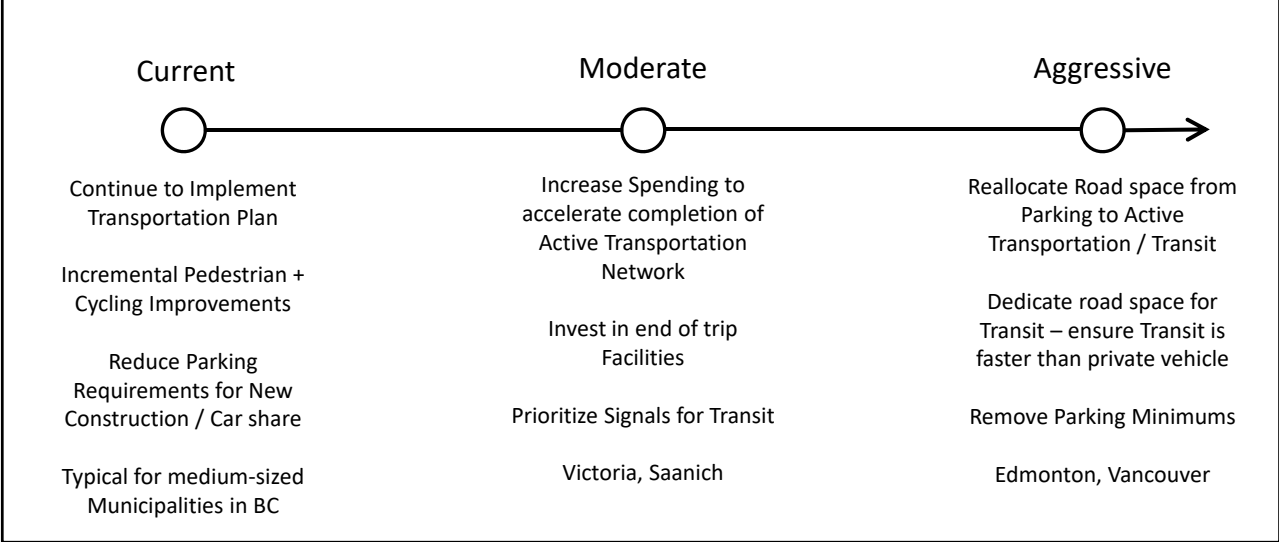
Transportation Plan targets 24% of trips by walking / biking / transit by 2041 (up from 12%)


Draft targets reduction in distance driven by 29% per person by 2041

If targets are met, GHG reduction of 17% by 2050 (offset by EV reduction)


Equity, Health and Community Co-benefits

Active Transportation





ELECTRIC VEHICLES

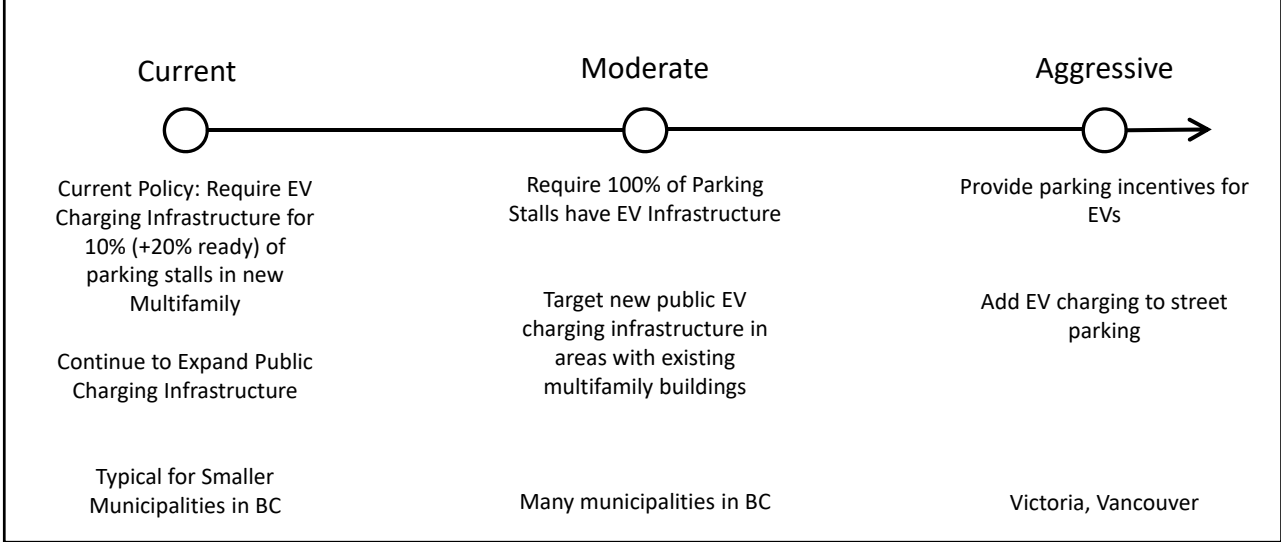


0.9% of Vehicles in Nanaimo are EV (December 2020)

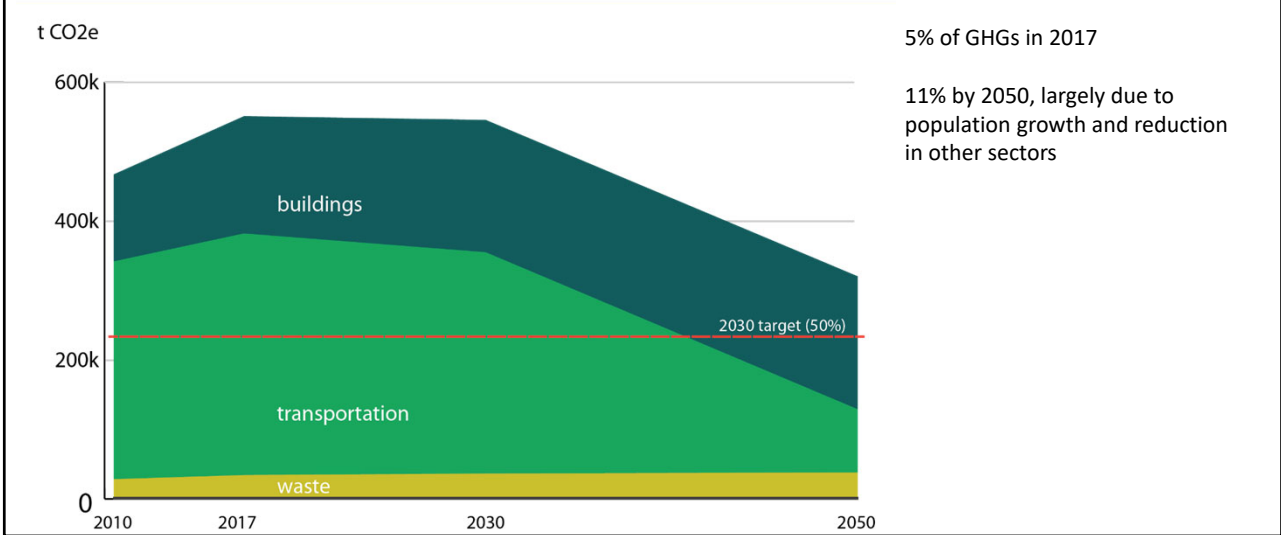
Projected to grow to 12% by 2030, despite mandate for 30% EV Sales

80% of 2018 Transportation Emissions from Personal Vehicles

Electric Vehicles



Solid Waste Business as Usual





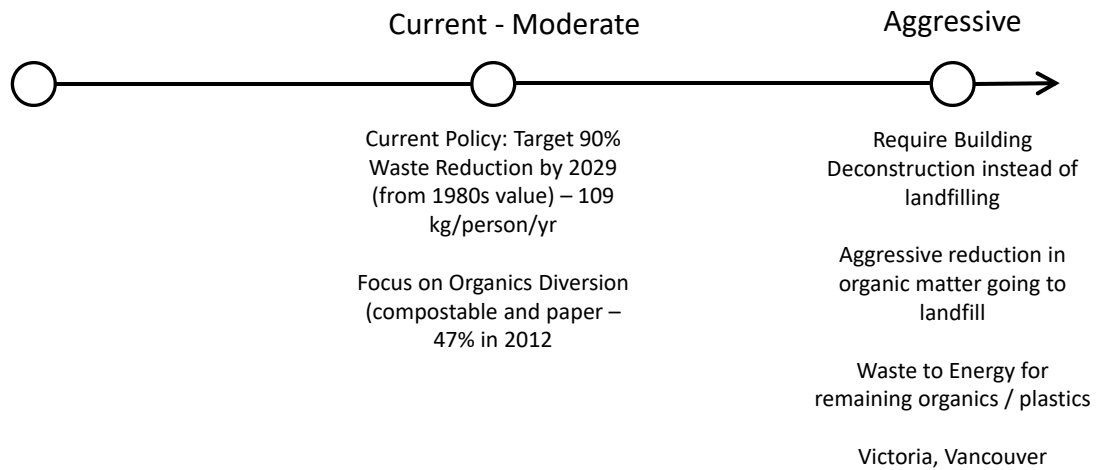
WASTE REDUCTION



Key driver of GHGs from waste is decomposition of organic matter in landfill

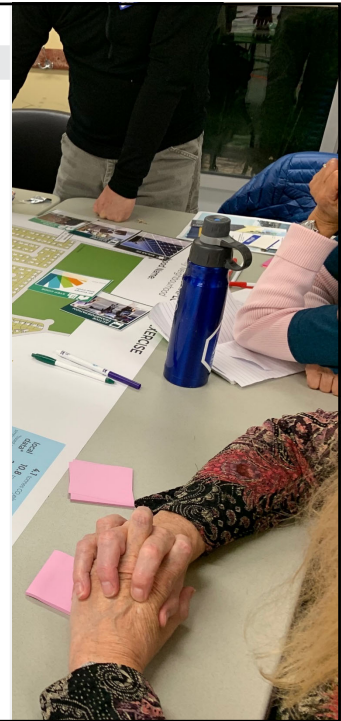
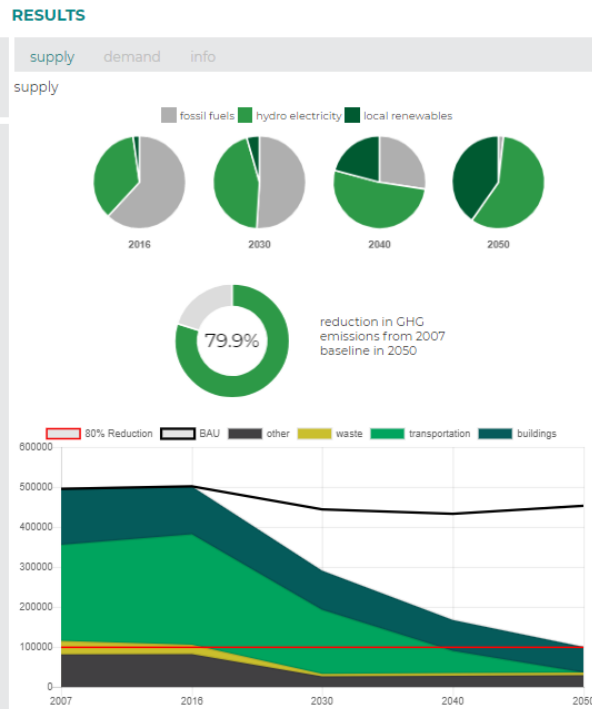
Diversion to composting or methane capture main solutions

Solid Waste



GHG Modelling


Continues in early fall



Next Steps:
Preparation for
**Environment
and Climate
Resilience
Emerging
Options**




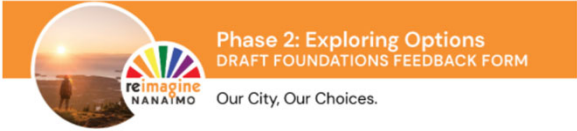
Areas of Climate/Environmental Focus




- Climate Mitigation: GHG targets & trends (July 14, 2021 meeting)
- Climate Adaptation: flood / rainfall / drought / heat / slope stability
- Watersheds: water quality & quantity
- Habitat conservation & restoration
- Urban forest & vegetation cover, urban agriculture
- Potential Integrating Options

Phase 2 | Overview





Phase 2: Exploring Options
DRAFT FOUNDATIONS FEEDBACK FORM
Our City, Our Choices.



Phase 2: Exploring Options
SCENARIOS
Our City, Our Choices.

Launched | June 28 **Launch | July 12**

Phase 2 | Closes September 20

Draft Foundations



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Seeking Input On:
Draft Foundation
Draft Goals
Draft Indicators

Exploring Scenarios



Phase 2: Exploring Options
SCENARIOS
Our City, Our Choices.

- Option 1 |**
Workshop Series
- Option 2 |**
Self-Guided Workshop
- Workshop Alternative |**
MetroQuest Platform



REGISTRATION

OUR CITY, OUR CHOICES SCENARIOS WORKSHOP SERIES

Would you like to participate in a lively, interactive discussion about the future of our city? We are offering eight online **Our City, Our Choices Scenarios Workshops** at different times of the day - we're hoping one works for you! The information and agenda will be the same for all meetings.

THANK YOU!

