



Sustainability *by* Design



**City of North Vancouver
100 Year Sustainability Vision**

OPPORTUNITIES AND CORE STRATEGIES WORKSHOP

Thursday June 19, 2008, 9:00am - 1:30pm

City Hall Conference Room A

WORKSHOP OBJECTIVES

- To develop an Opportunities and Core Strategies diagram for the 100 Year Sustainability Vision

WORKSHOP AGENDA

9:00 - 9:30 Breakfast / Registration

Time	Task	Lead
9:30 - 9:40	Welcome	CNV
9:40 - 10:00	Project overview: agenda, general project overview, workshop 1 report back, and workshop 2 introduction	DCS
10:00 - 10:20	Overview to preliminary current GHG map and low-GHG City diagram	DCS
10:20 - 10:30	Break	
10:30 - 12:00	Group break-out sessions: discussion & development of the Opportunities and Core Strategies diagram for the 100 Year Sustainability Vision	DCS - in 3 groups (GO, GREEN, HOME)
12:00-12:45	Working lunch	
12:45 -1:20	Plenary review & discussion	DCS
1:20 -1:30	Thank you and next steps	DCS

WORKSHOP INPUTS & OUTPUTS

Inputs

- Project framework: Vision, Meta-Target, Principles, Goals, and Objectives
- Core strategies discussion questions
- Preliminary current GHG map
- Preliminary low-GHG City diagram
- Energy Use Poster

Outputs

- Overlapping Opportunities & Core Strategies diagrams for the 100 Year Sustainability Vision from the three groups (GO, GREEN, HOME)

100 YEAR SUSTAINABILITY VISION FRAMING WORKSHOP

Project Scope

This project is a stakeholder driven, multidisciplinary design charrette process to develop a *100 Year Sustainability Vision* for the City of North Vancouver. Guided by the Province's recently introduced Greenhouse Gas Reduction Targets Act (November 2007) to reduce GHG emissions by 80% below 2007 levels by 2050, the project will address sustainability through the lens of climate change. As a result, the project will have a major focus on the reduction of GHG emissions towards possible net zero GHG by 2107, the City's 200th anniversary, and will explore how such a target influences sustainable urban form and vice versa. The project will also focus in other areas of the physical realm that concern the City's liveability more directly (e.g. water quality, housing affordability). By developing a low-GHG 100 Year Sustainability Vision the City will set new standards in urban planning and policy, while providing a framework for dramatic greenhouse gas reductions. The results of this charrette will advance long-term planning work for the City and, as a Sustainability by Design (SxD) case study, will also serve to benefit others in the region, province, and nation.

Project Vision

To be a vibrant, diverse, and highly livable community that provides for the social and economic needs of our community within a net zero carbon environment by the City's 200th Birthday in 2107.

Project Meta-Targets

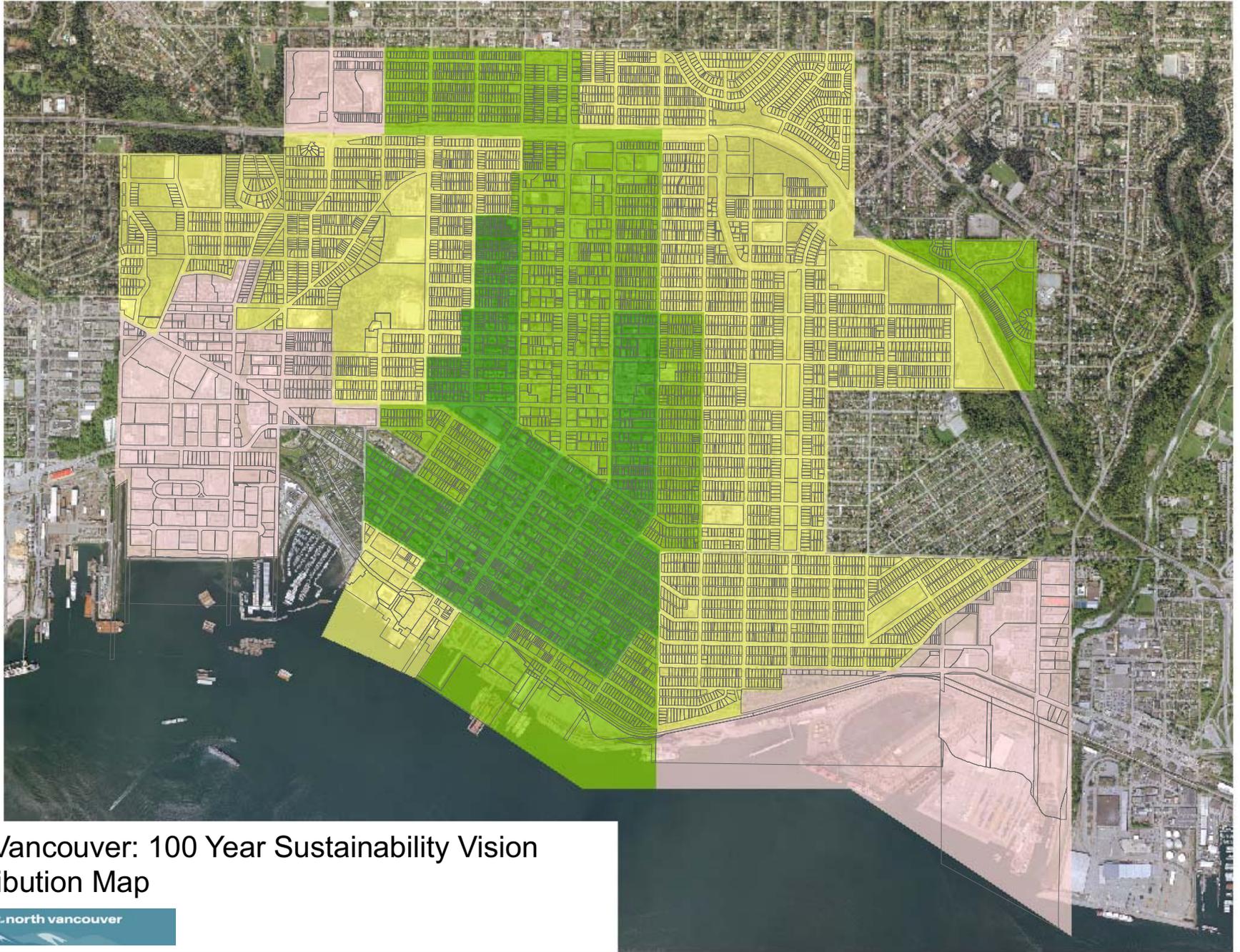
- To achieve zero net greenhouse gas (GHG) emissions by 2107
- To reduce GHG by 80% below 2007 levels by 2050
(Greenhouse Gas Reduction Targets Act, Province of BC, November 2007)

Key Framing Issues

- Population
- Housing
- Land Use
- Natural Areas
- Climate Change
- GHG Emissions
- Employment
- Transportation
- Infrastructure



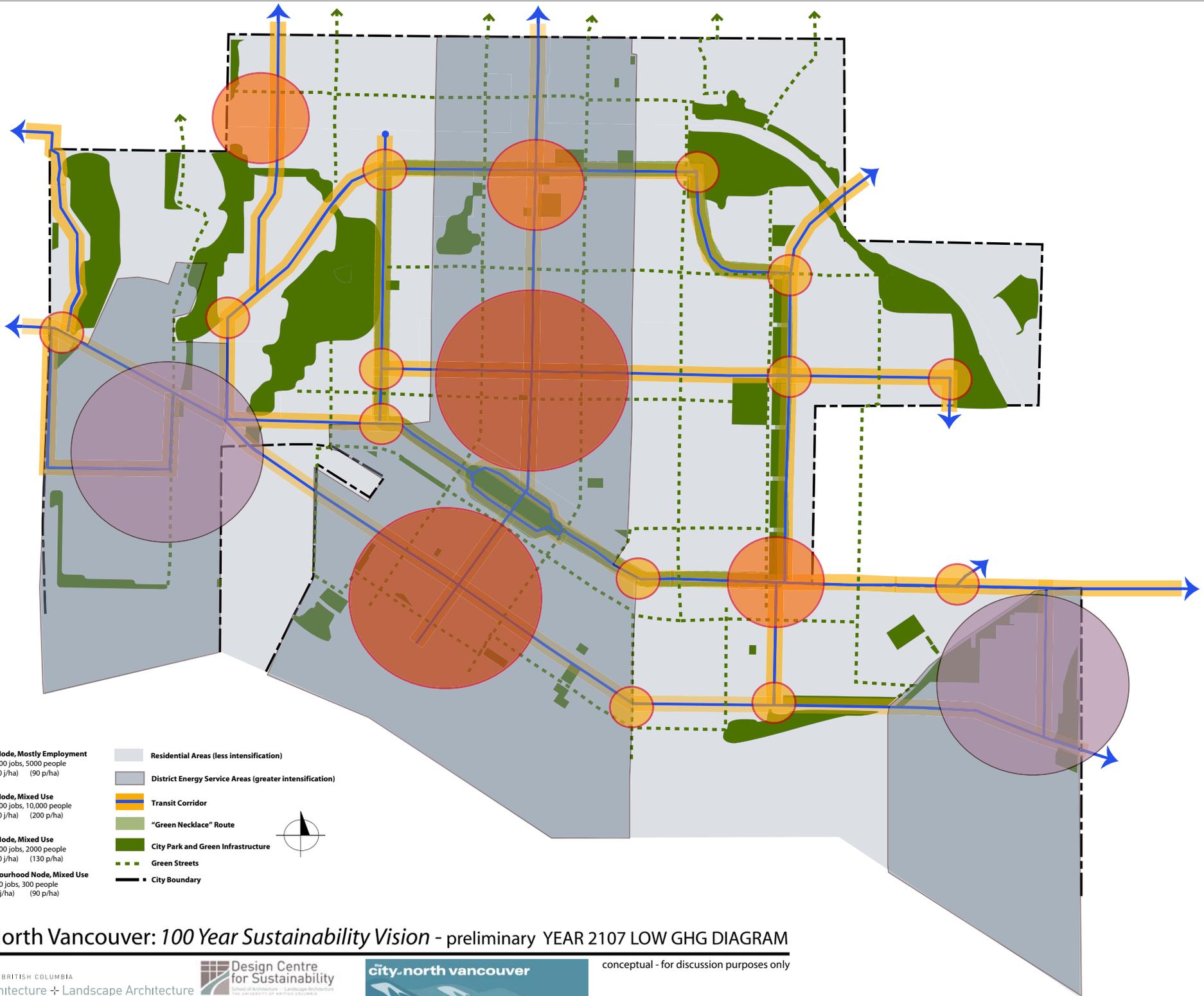
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**Total GHGs / Person
(Residential + Jobs) (kg)**

- < 1500
- 1500 - 2500
- 2500 - 4500
- > 4500

City of North Vancouver: 100 Year Sustainability Vision Carbon Contribution Map



City of North Vancouver: 100 Year Sustainability Vision - preliminary YEAR 2107 LOW GHG DIAGRAM

Design Principle 1 | Appropriate housing for all

Proposed Goal *To promote sustainability by providing a range of housing types in every neighbourhood to accommodate all age and income demographics.*

The preliminary low-GHG City diagram proposes to strengthen existing corridors and develops new mixed-use corridors along transit routes with a mix of higher density housing types accommodating a total population of 105,000 residents by 2107. These new areas of development will locate more residents within close proximity to transit and increase the diversity of housing types throughout the City, within each neighbourhood. In addition, new neighbourhood-scale, mixed-use nodes located throughout the City will enhance walkability and provide further opportunities for a mix of demographics and aging-in-place. Along Lonsdale Avenue, opportunities to connect to an expanding district energy system will encourage new, innovative building types and enhance affordability through energy efficiency. More detailed aspects will be explored at a finer scale in the charrette (e.g. specific building typologies, building retrofit strategies, specific uses within various neighbourhood nodes).

Key Questions

Does the diagram represent a reasonable application of the principle to the real community of North Vancouver? If not, how should it be changed to provide housing, and where would you place these changes?

How would you push the goal further through implementation in the diagram? Please provide input about how you would further implement appropriate housing for all at this scale.

Design Principle 2 | Good and plentiful jobs close to home

Proposed Goal *To foster sustainability by maximizing the number and types of jobs for its residents throughout the community, both in homes and within walking, cycling or transit commute from homes.*

The preliminary low-GHG City diagram proposes to strengthen existing corridors and develop new mixed-use corridors along transit routes with a mix of retail, service, and civic spaces that will provide the capacity necessary for both daily goods and services and a variety of professional-level employment opportunities, maintaining a jobs-population ratio of approximately one job per working-age person. In addition, the preliminary diagram proposes new mixed-use nodes located throughout the City, including two major “employment nodes” that preserve and build on existing commercial and industrial capacity and bring new jobs, goods and services into each neighbourhood. The most intense employment areas, located along Lonsdale Avenue and within the two “employment nodes” are connected to an expanding district energy system. More detailed aspects will be explored at a finer scale in the charrette (e.g. specific building typologies, live-work and home-business opportunities, specific uses within various neighbourhood nodes).

Key Questions

Does the diagram represent a reasonable application of the principle to the real community of North Vancouver? If not, how should it be changed to provide jobs, and where would you place these changes?

How would you push the goal further through implementation in the diagram? Please provide input about how you would further implement jobs at this scale.

Design Principle 3 | Mixed use corridors accessible to all

Proposed Goal *To support sustainability by providing walkable, transit-supported, safe, accessible, and highly liveable mixed-use corridors.*

The preliminary low-GHG City diagram proposes to increase the mix of land uses along corridors and establish mixed use nodes at approximately 400 metres, with walkable, transit supported intervals along these corridors. The urban, major and neighbourhood nodes consist of medium to high density development. The proposed diagram shows improved east to west transit connections to, from and through the City's nodes, and the intent to link to the District's key villages. The internal street networks provide accessible pedestrian and bicycle connections to the mixed use corridors, as well as to the urban, major and neighbourhood nodes. More detailed aspects will be explored at a finer scale in the charrette (e.g. types of uses and services within specific nodes and along corridors, form and character of buildings, as well as design of streetscapes and public open spaces along parts of a corridors and at specific nodes, revitalization of the trolley bus system, and/or trail connections through natural environments).

Key Questions

Does the diagram represent a reasonable application of the principle to the real community of North Vancouver? If not, how should it be changed to provide mixed use corridors, and where would you place these changes?

How would you push the goal further through implementation in the diagram? Please provide input about how you would further implement mixed use corridors at this scale.

Design Principle 4 | Five minute walking distance

Proposed Goal *To promote sustainability by ensuring citizens live within walking distance to jobs, goods, services, and open spaces.*

The preliminary low-GHG City diagram proposes to place mix use and higher density development along corridors and within nodes throughout the City so that surrounding lower density areas are within walking distance (400 metres) to goods and services. This enables all residents to access office, commercial, retail, and institutional services, as well as civic uses and green space, within a five minute walk of their home. All streets and corridors offer attractive, safe and interconnected pedestrian oriented streets for disabled access, pedestrian, bicycle and vehicular flow of movement through all parts of the City. More detailed aspects will be explored at a finer scale in the charrette (e.g. the design of pedestrian, bicycle and vehicular connections to create a “sense of place”).

Key Questions

Does the diagram represent a reasonable application of the principle to the real community of North Vancouver? If not, how should it be changed to provide for a five minute walk rule, and where would you place these changes?

How would you push the goal further through implementation in the diagram? Please provide input about how you would further implement five minute walking distance objectives at this scale.

Design Principle 5 | Access to linked public places, parks, and natural areas

Proposed Goal *To foster sustainability by ensuring access to an attractive, safe, and interconnected public realm for all citizens.*

The preliminary low-GHG City diagram proposes to preserve the major open spaces. These run primarily North-South to facilitate storm water management. A series of East-West major greenways connect major public gathering places, integrating publicly accessible green and urban spaces, and reviving the Green Necklace project. A comprehensive green street network capitalizes on the south facing slope, with East-West streets that provide accessible pedestrian and bicycle connections and accommodate urban gathering spaces, and North-South streets that perform ecological functions. More detailed aspects will be explored at a finer scale in the charrette (e.g. diversity of character for the different open spaces, tree canopy, food production sites).

Key Question

Does the diagram represent a reasonable application of the principle to the real community of North Vancouver? If not, how should it be changed to provide access to linked public places, parks and natural areas, and where would you place these changes?

How would you push the goal further through implementation in the diagram? Please provide input about how you would further implement access to linked public places, parks and natural areas at this scale.

Design Principle 6 | Green, durable, timeless infrastructure

Proposed Goal *To support sustainability by providing buildings and infrastructure that have longer lifecycles and a reduced impact on the environment.*

The preliminary low-GHG City diagram proposes two major moves for green infrastructure. First, a comprehensive stormwater management network with North-South major open spaces and green streets that perform ecological functions, capitalizing on the south facing slope and layering with other multi-purpose functions. Second, the expansion of the LEC district heating system throughout Lonsdale Avenue (two blocks on each side). Two major nodes East and West of Lonsdale Avenue also include new district systems. More detailed aspects will be explored at a finer scale in the charrette (e.g. specific low-impact, cost effective, and durable strategies, application of the “waste is food” concept, introduction of innovative energy standards).

Key Questions for Principles 6 and 7

Does the diagram represent a reasonable application of the principle to the real community of North Vancouver? If not, how should it be changed to provide for green, durable, timeless infrastructure and climate change adaptation, and where would you place these changes?

How would you push the goal further through implementation in the diagram? Please provide input about how you would further implement infrastructure and climate change adaptation objectives at this scale.

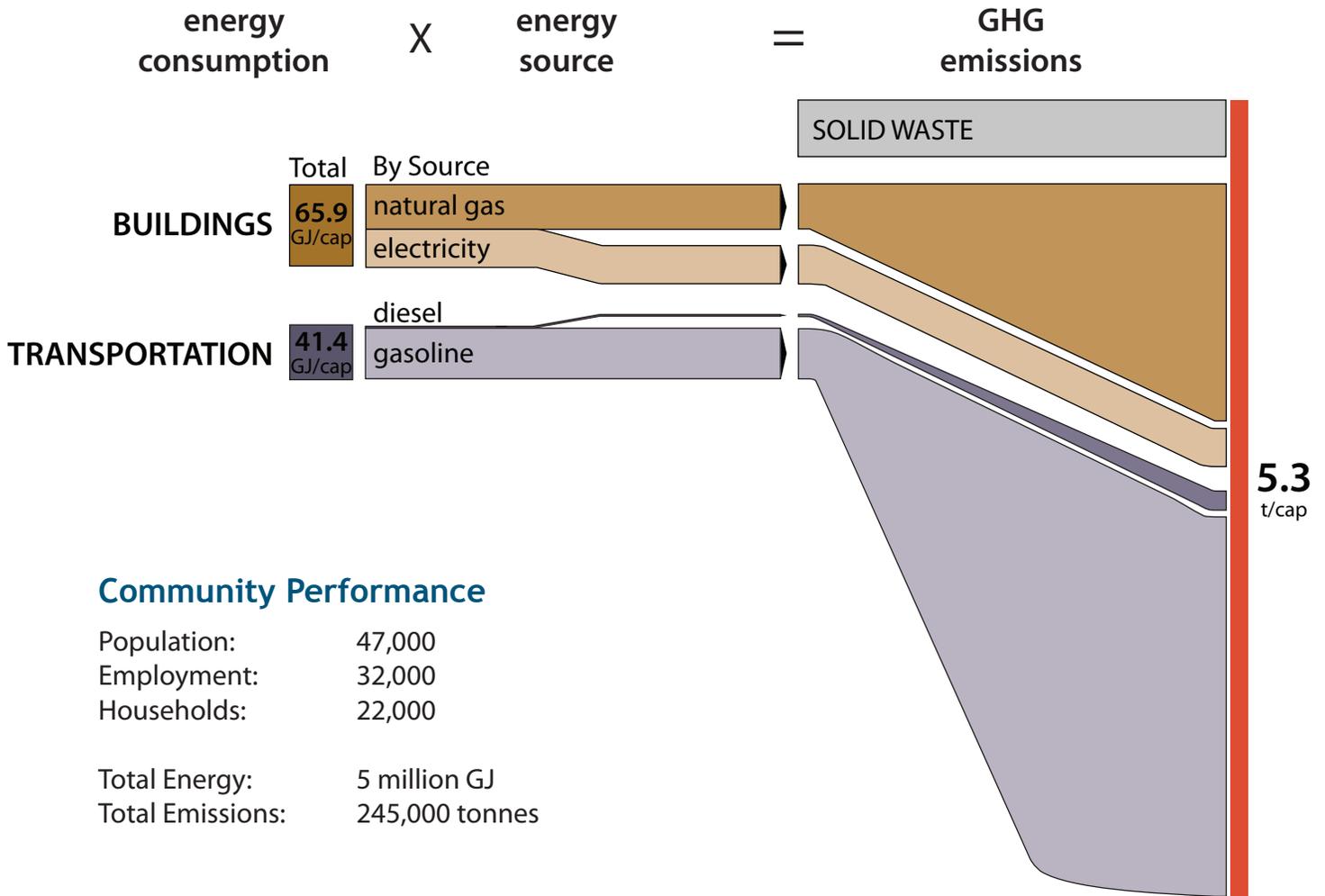
Design Principle 7 | Climate change adaptation

Proposed Goal *To advance sustainability by ensuring adaptation and resiliency to potential challenges in a way that does not compromise citizens' quality of life.*

The preliminary low-GHG City diagram proposes a range of compact nodes distributed throughout the city, clustering development and minimizing development in vulnerable areas, such as slopes (flood/landslide risk) and forested areas (fire risk). This presents a challenge for the major nodes located on the waterfront, and requires careful study considering potential sea level rise. The stormwater management strategy (described in Principle 6) minimizes the impact of decreased spring and summer precipitation, floods, run-off, erosion, and landslides. The comprehensive network of green streets and open spaces mitigates the urban heat island effect, helping cope with higher temperatures and their consequences. More detailed aspects will be explored at a finer scale in the charrette (e.g. incremental opportunities and specific strategies to ensure flexibility and resiliency in all built projects in terms of energy, water, food, etc).



2007 BASELINE ENERGY AND EMISSION FIGURES



Community Performance

Population:	47,000
Employment:	32,000
Households:	22,000
Total Energy:	5 million GJ
Total Emissions:	245,000 tonnes

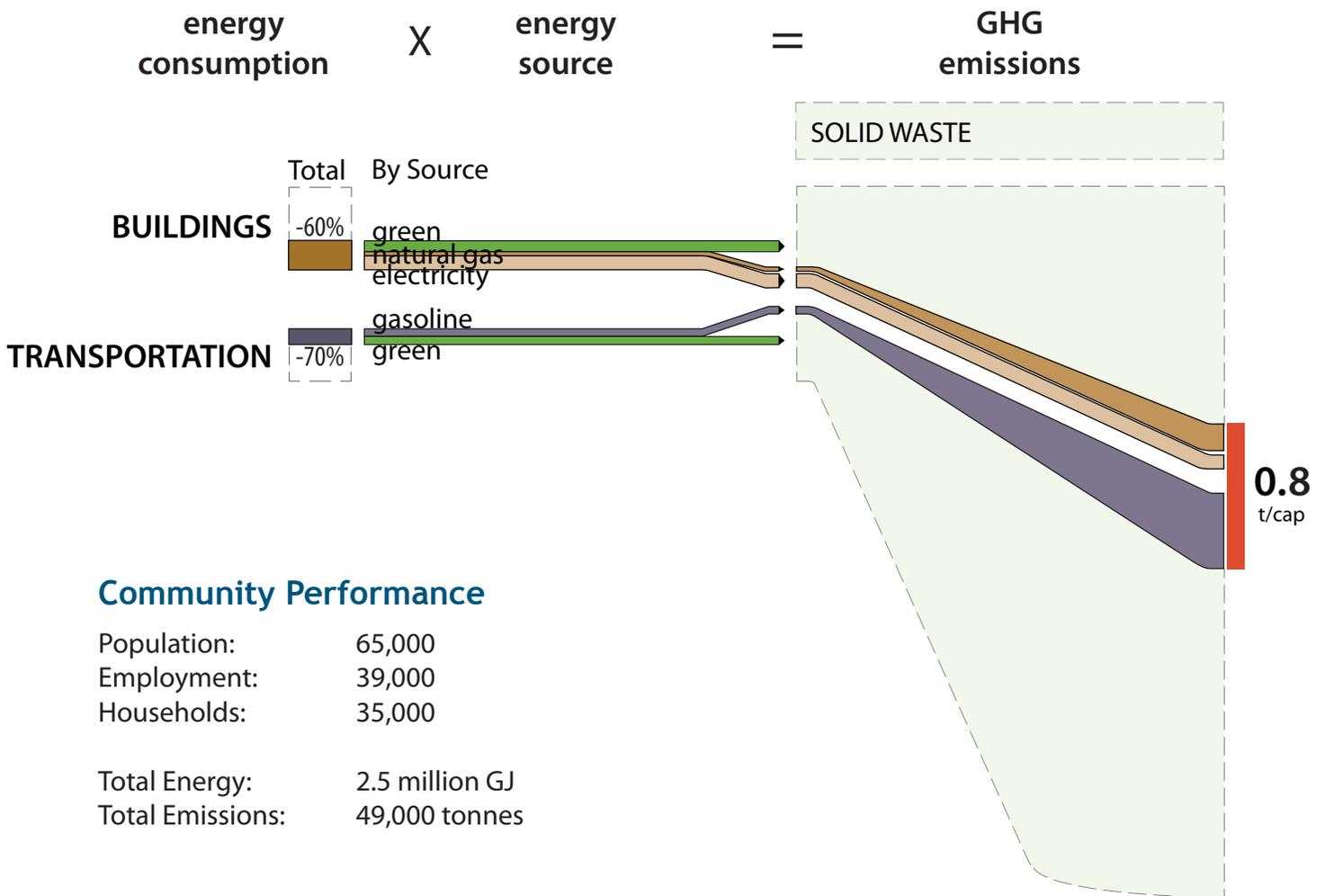
Emission Factors (kg CO₂e/GJ)

natural gas	49
electricity	.0001
diesel	68
gasoline	73
green (various sources)	0

All figures and assumptions presented in this handout are conceptual, and have been provided for discussion purposes only.

2050

MEET PROVINCIAL TARGET TO REDUCE TOTAL 2007 COMMUNITY EMISSIONS BY 80 PERCENT

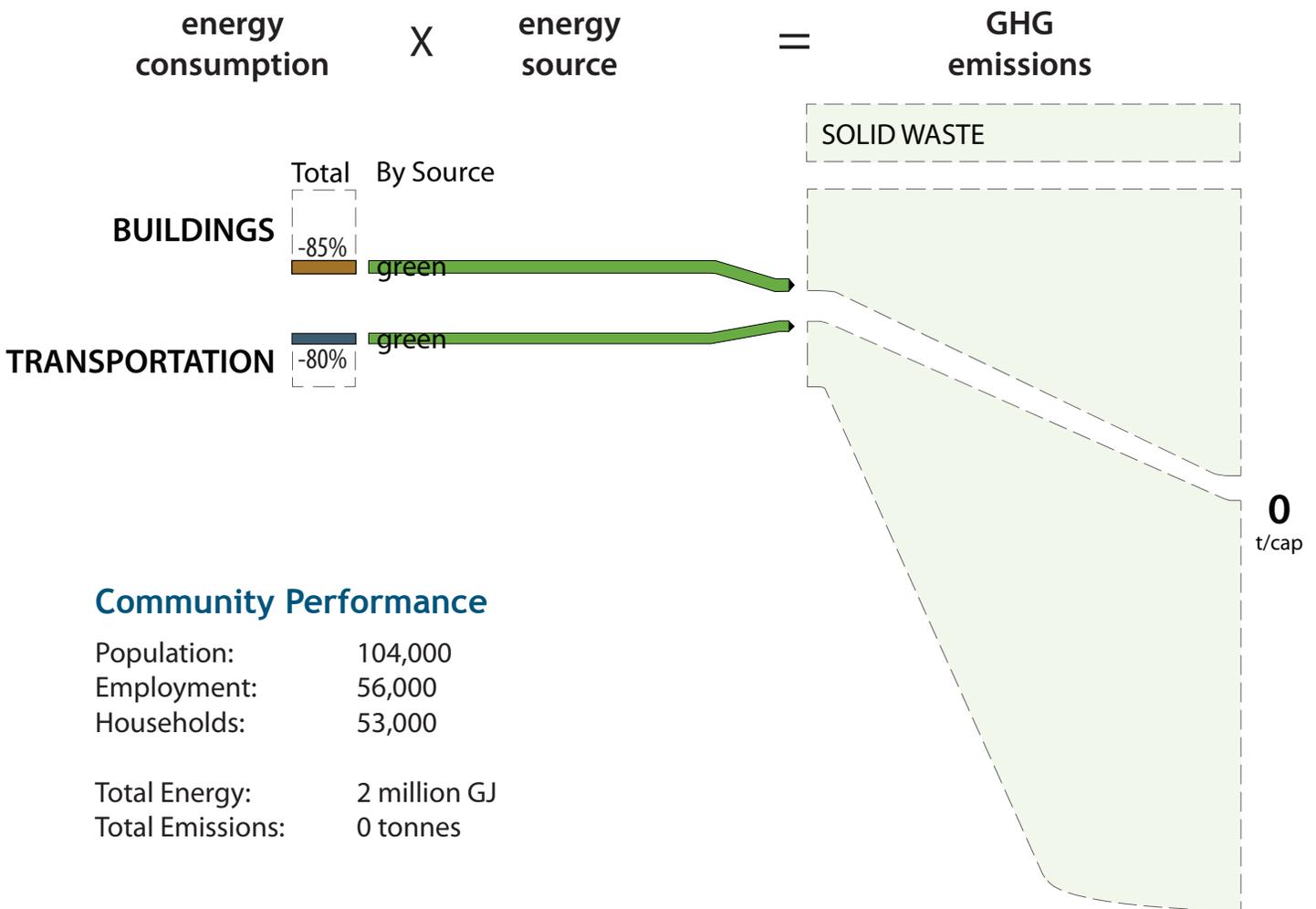


Assumptions (for discussion)

- Increased attached and stacked building types
- High performance new construction
- Major building retrofits
- Increased walkability
- Enhanced low-carbon transit
- District energy system expanded
- District energy from low-carbon fuel source
- Emissions from waste eliminated

2107

MEET 100 YEAR SUSTAINABILITY VISION TARGET TO REDUCE COMMUNITY EMISSIONS TO ZERO



Assumptions (for discussion)

- Increased attached and stacked building types
- High performance new construction
- Major building retrofits
- Increased walkability
- Enhanced low-carbon transit
- District energy system expanded
- District energy from low-carbon fuel source
- Emissions from waste eliminated
- District energy system adapted for electricity co-generation
- Additional low-carbon energy generation added throughout City
- Low-carbon Provincial energy supply