



Sustainability *by* Design City & District of North Vancouver 100 Year Sustainability Vision





Sustainability *by* Design City & District of North Vancouver

100 Year Sustainability Vision

Project Overview

Objectives

Pop./Job Matrix

Common Strategies

Node intensification

Transport network

Green network

Energy systems

Sustainable City Core

100yr concept plan

Home and work

Go

Green

Project Vision

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



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Project Meta-Targets

- To achieve zero net greenhouse gas (GHG) emissions by 2107
- To reduce GHG by 80% below 2007 levels by 2050

Province of BC: Greenhouse Gas Reduction Targets Act (Nov. 2007)



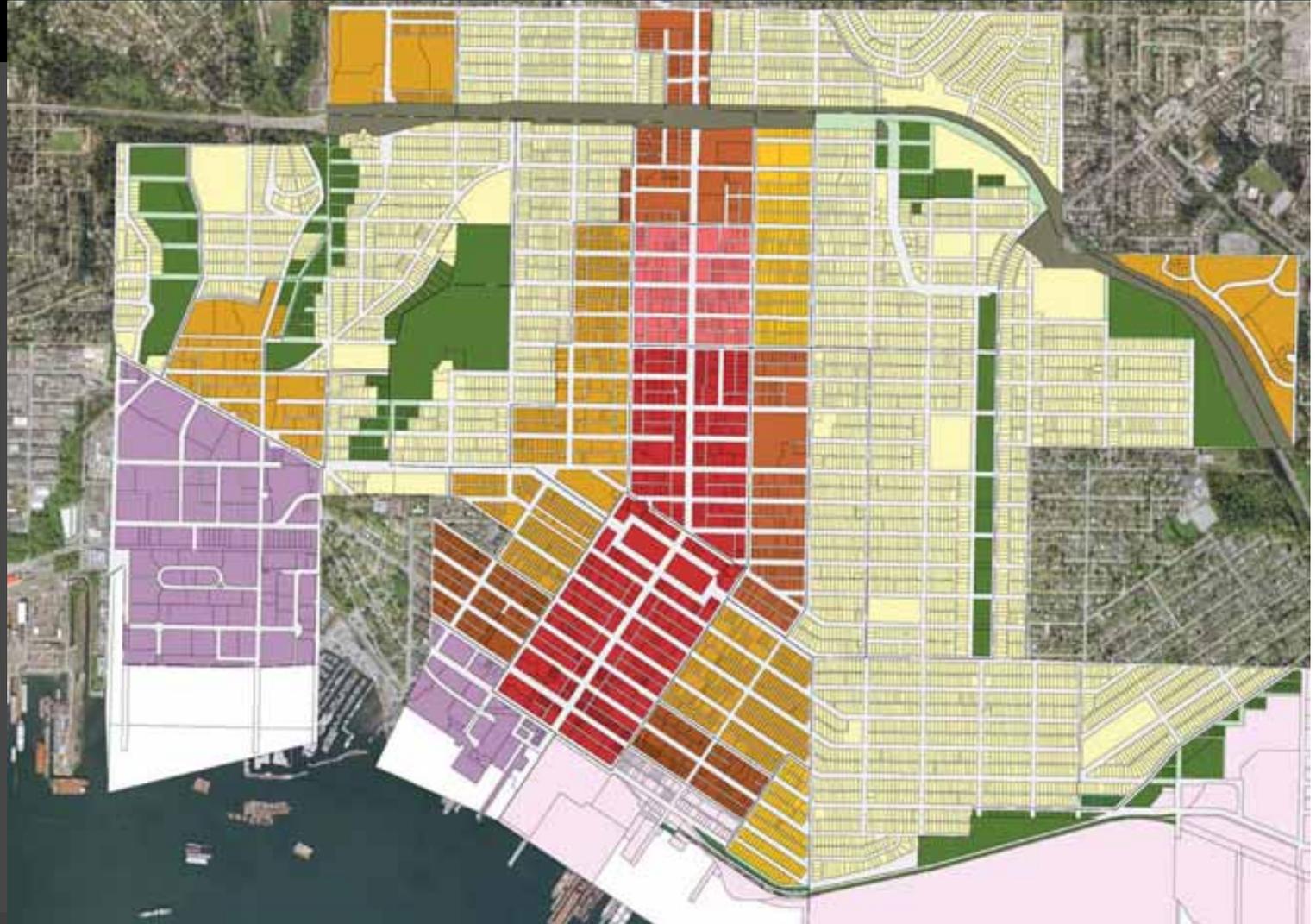
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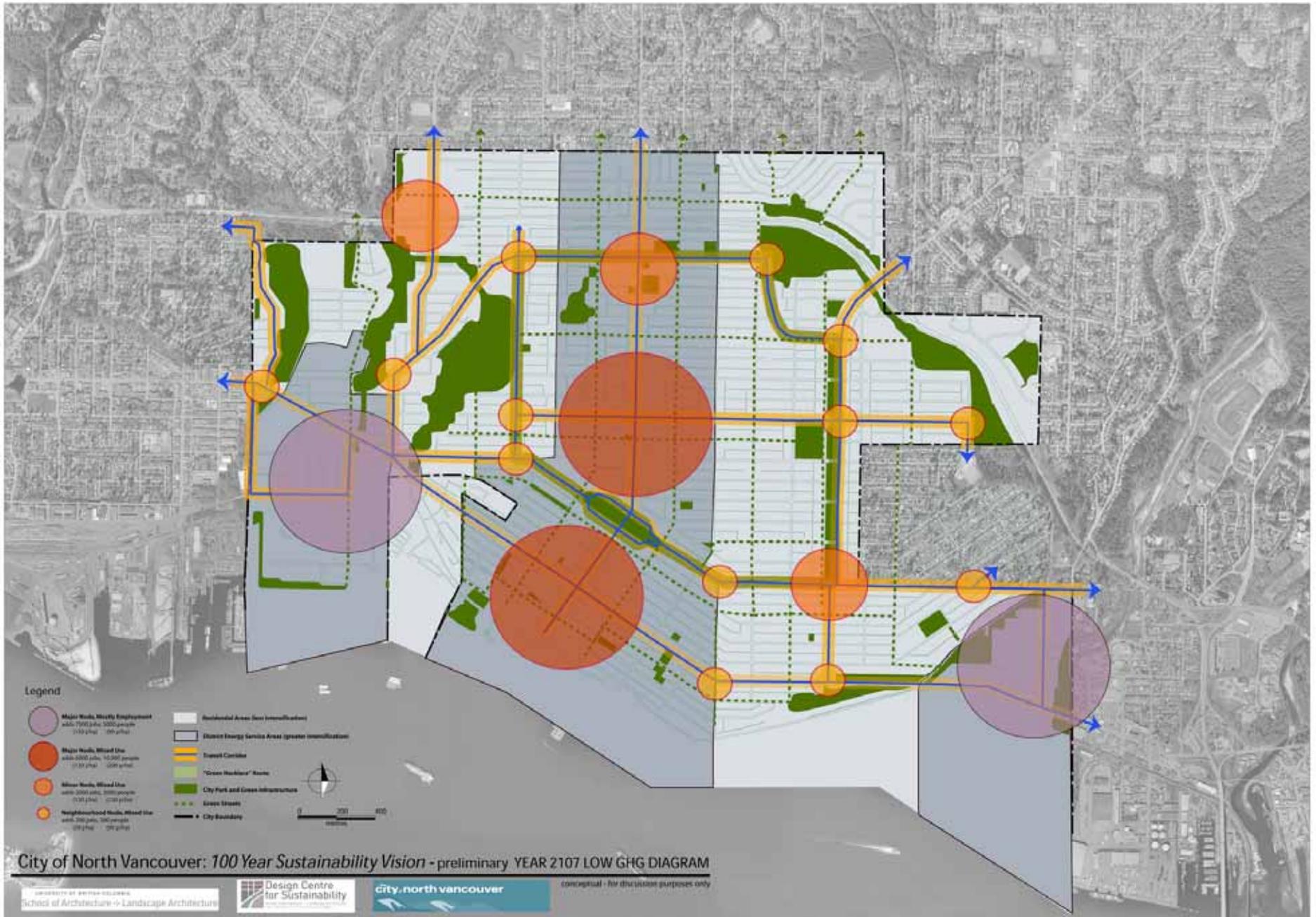
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Legend



Major Node, Mostly Employment
adds 7500 jobs, 5000 people
(150 j/ha) (90 p/ha)



Major Node, Mixed Use
adds 6000 jobs, 10,000 people
(120 j/ha) (200 p/ha)



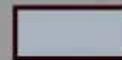
Minor Node, Mixed Use
adds 2000 jobs, 2000 people
(120 j/ha) (130 p/ha)



Neighbourhood Node, Mixed Use
adds 200 jobs, 300 people
(50 j/ha) (90 p/ha)



Residential Areas (less intensification)



District Energy Service Areas (greater intensification)



Transit Corridor



"Green Necklace" Route



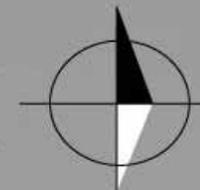
City Park and Green Infrastructure



Green Streets



City Boundary



FRAMING THE CHALLENGE:

The City of North Vancouver's 100 Year Sustainability Vision

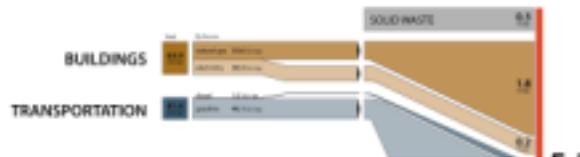
$$\text{energy consumption} \times \text{energy source} = \text{GHG emissions}$$

2007

Baseline energy and emission figures

POPULATION: 47,000
 EMPLOYMENT: 32,000
 HOUSEHOLDS: 22,000

TOTAL ENERGY: 5 million GJ
 TOTAL EMISSIONS: 245,000 tonnes



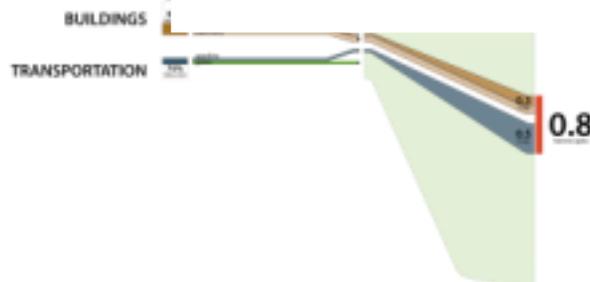
$$\text{energy consumption} \times \text{energy source} = \text{GHG emissions}$$

2050

Meet Provincial target to reduce total 2007 community emissions by 80 percent

POPULATION: 65,000
 EMPLOYMENT: 39,000
 HOUSEHOLDS: 35,000

TOTAL ENERGY: 2.5 million GJ
 TOTAL EMISSIONS: 49,000 tonnes



2107

Meet 100 Year Sustainability Vision target to reduce community emissions to zero

POPULATION: 104,000
 EMPLOYMENT: 56,000
 HOUSEHOLDS: 53,000

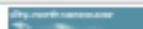
TOTAL ENERGY: 2 million GJ
 TOTAL EMISSIONS: 0 tonnes



Emission factors (kg CO₂e/GJ)

natural gas	49
electricity	1001
coal	98
gasoline	73
green (various sources)	0

Source: BC Energy Services, 2007



conceptual - for discussion purposes only

2050 ASSUMPTIONS

- Attached/stacked buildings
- High performance construction
- Increased walkability
- Enhanced low-carbon transit
- Expanded district energy
- Zero emissions from waste

Energy consumption



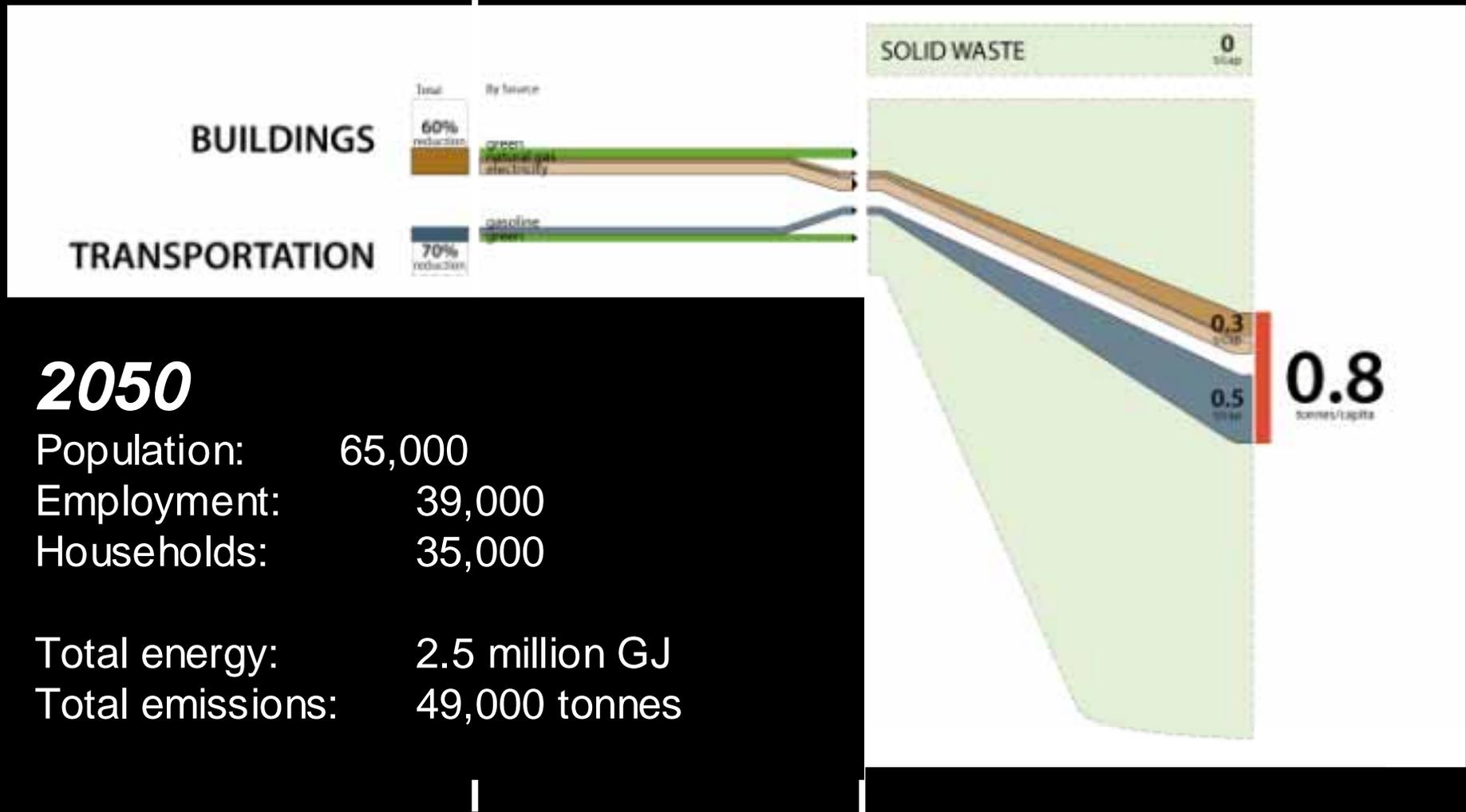
Energy source



*Energy
consumption*

*Energy
source*

*GHG
emissions*



2107 ASSUMPTIONS

- Attached/stacked buildings
- High performance construction
- Increased walkability
- Enhanced low-carbon transit
- Expanded district energy (co-generation)
- Additional low-carbon energy (City, Provincial)

Energy consumption



Energy source



*Energy
consumption*

*Energy
source*

*GHG
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City of North Vancouver

	Present	2107
People	45,000	135,000
Jobs	27,000	90,000

PRESENT AND PROJECTED TARGETS FOR THE DISTRICT OF NORTH VANCOUVER

- Approximate doubling of the District's overall population from:
83,000 (2006) to 80,000 (2107)
- In the two study areas:

LOWER CAPILANO AREA	PRESENT CONDITION (est)	2107 TARGETS
POPULATION	5,750	20,000
JOBS	2,000	8,000

LOWER LYNN/ MAPLEWOOD/ LYNNMOUR AREA	PRESENT CONDITION (est)	2107 TARGETS
POPULATION	4,500	25,000
JOBS	2,000	10,000



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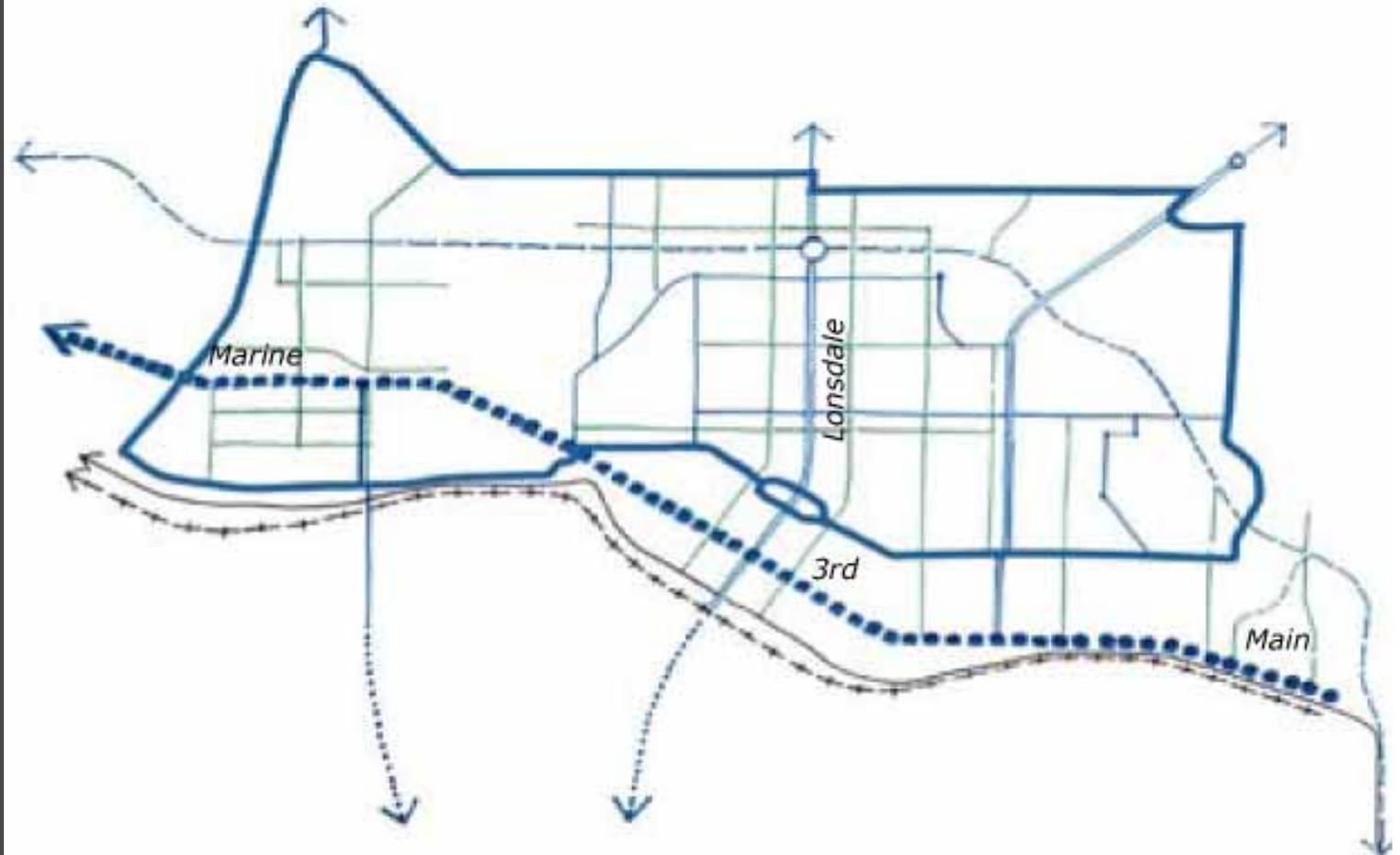
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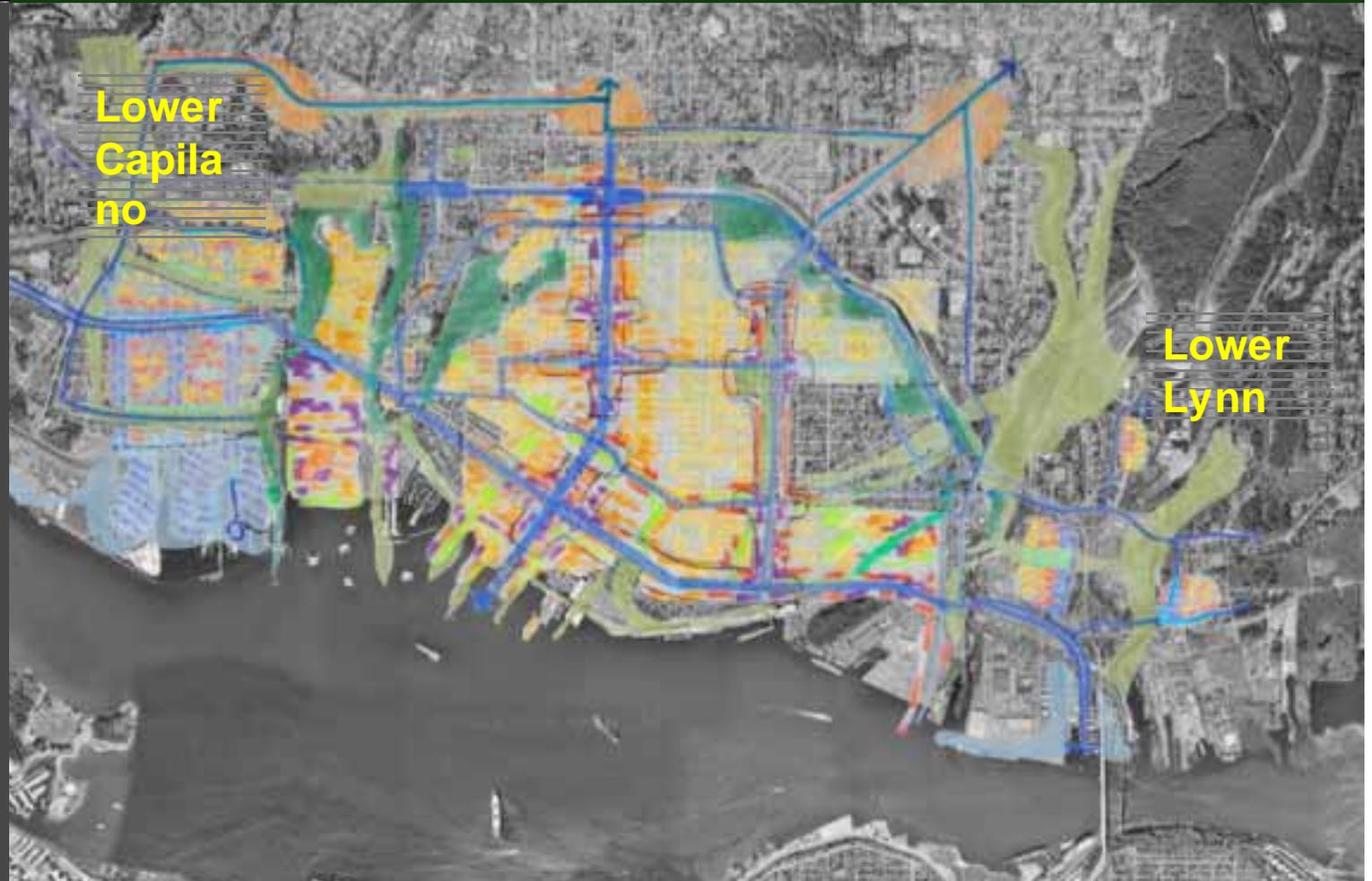
District of North Vancouver 100 Year Sustainability Vision

District

Sustainable Nodes

Day two plan

- Lower Capilano
- Lower Lynn
- Home and work
- Go
- Green





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**100
Year
Vision**



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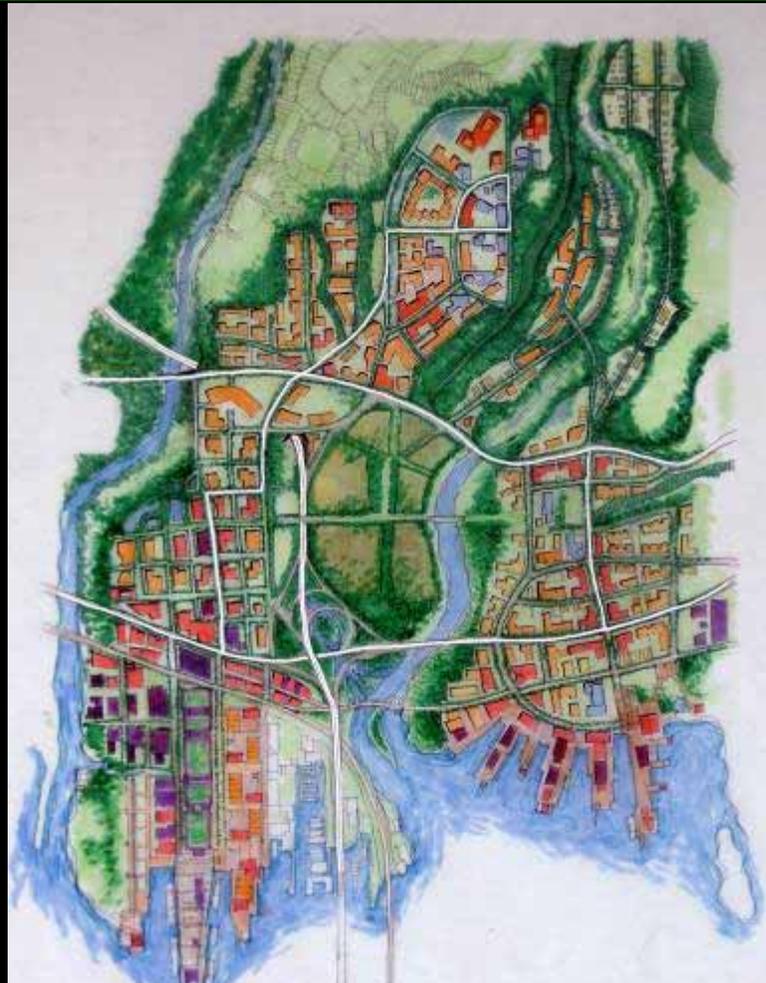
Lower Capilano

Lower Lynn

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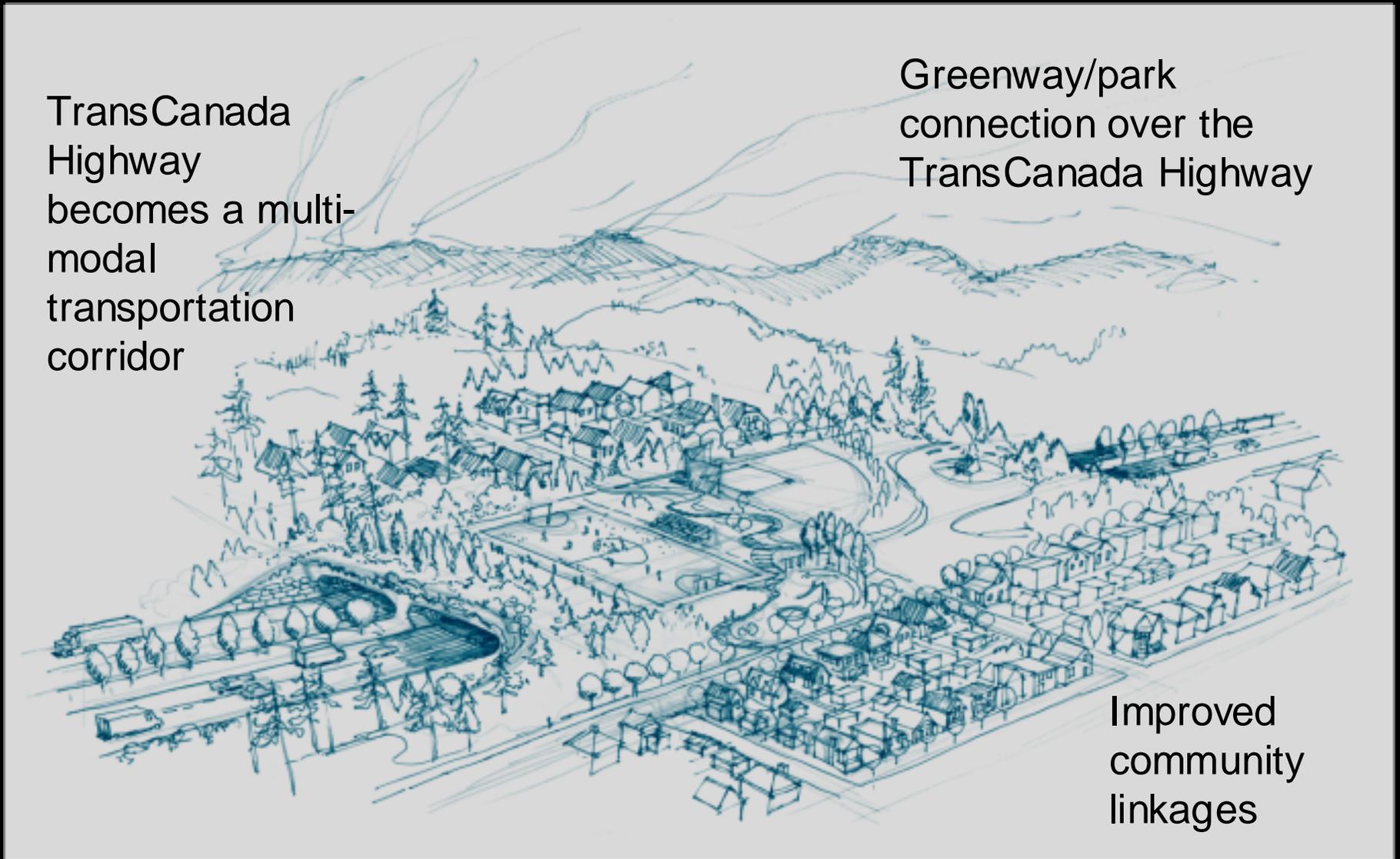
**100
Year
Vision**

SAMPLE SKETCH OF 2107 VISION FOR TRANSPORTATION IN THE DISTRICT

TransCanada Highway becomes a multi-modal transportation corridor

Greenway/park connection over the TransCanada Highway

Improved community linkages



100 YEAR VISION SKETCH OF NEW COMMUNITY CENTRE IN LOWER CAPILANO





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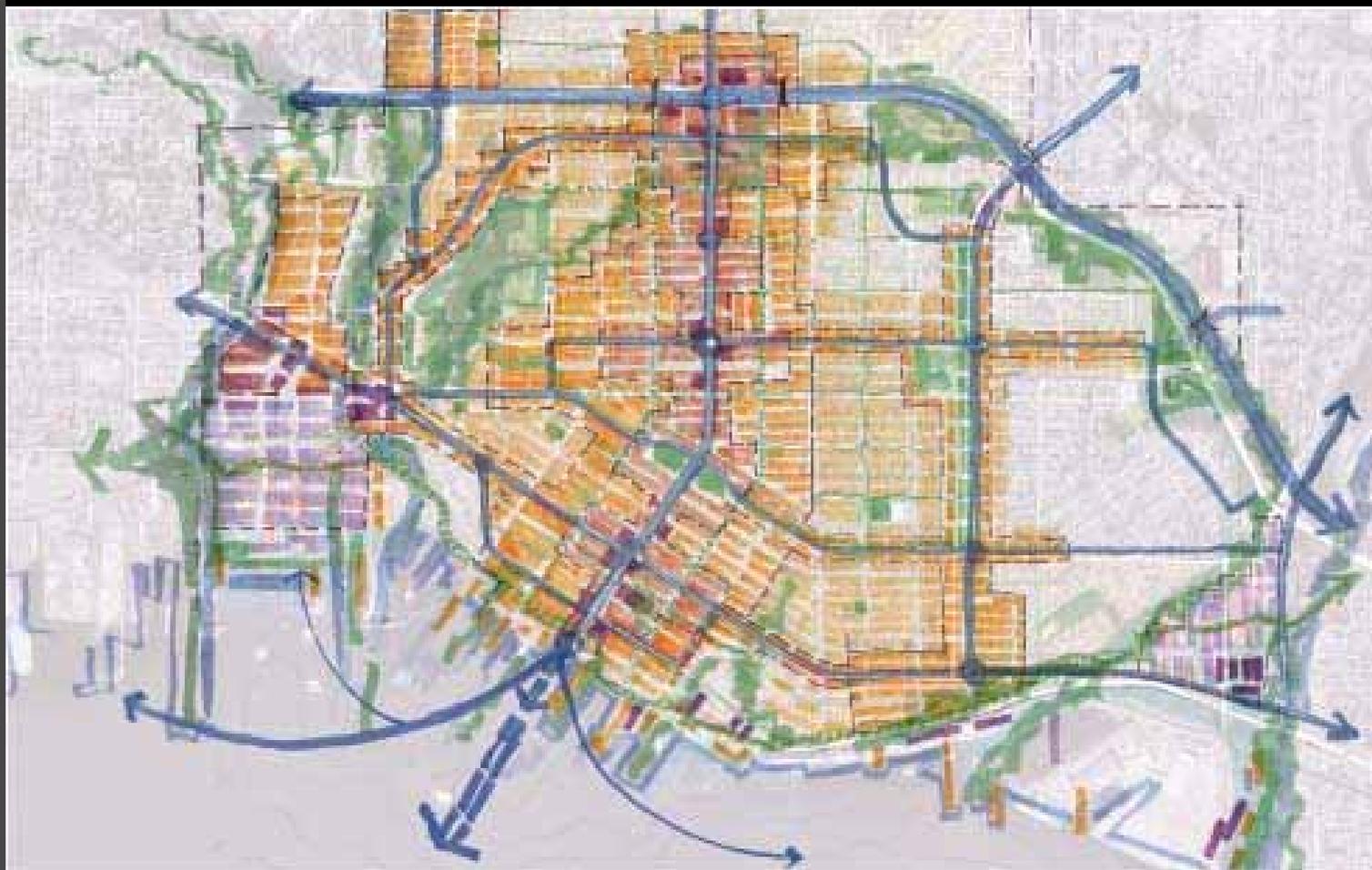
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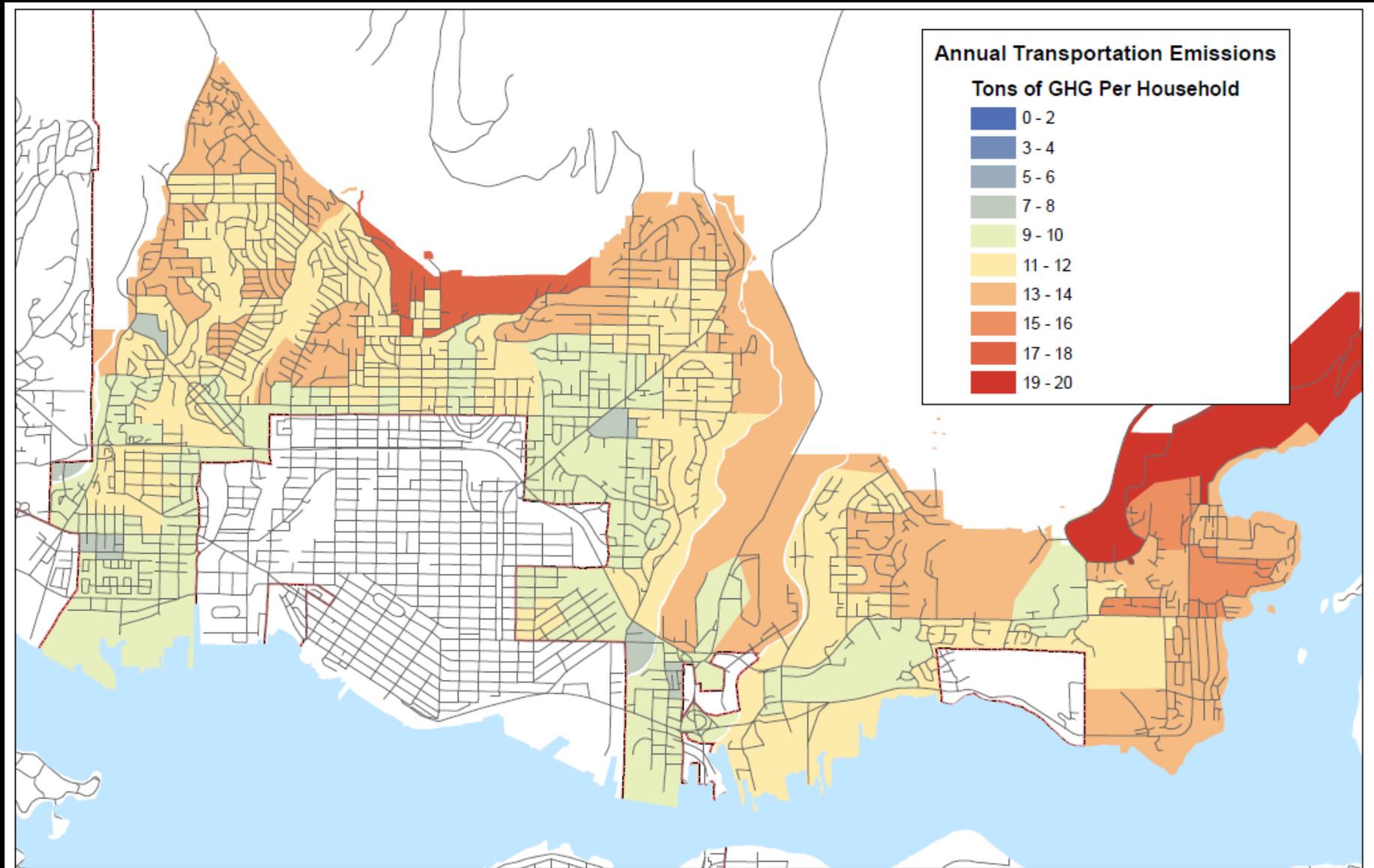
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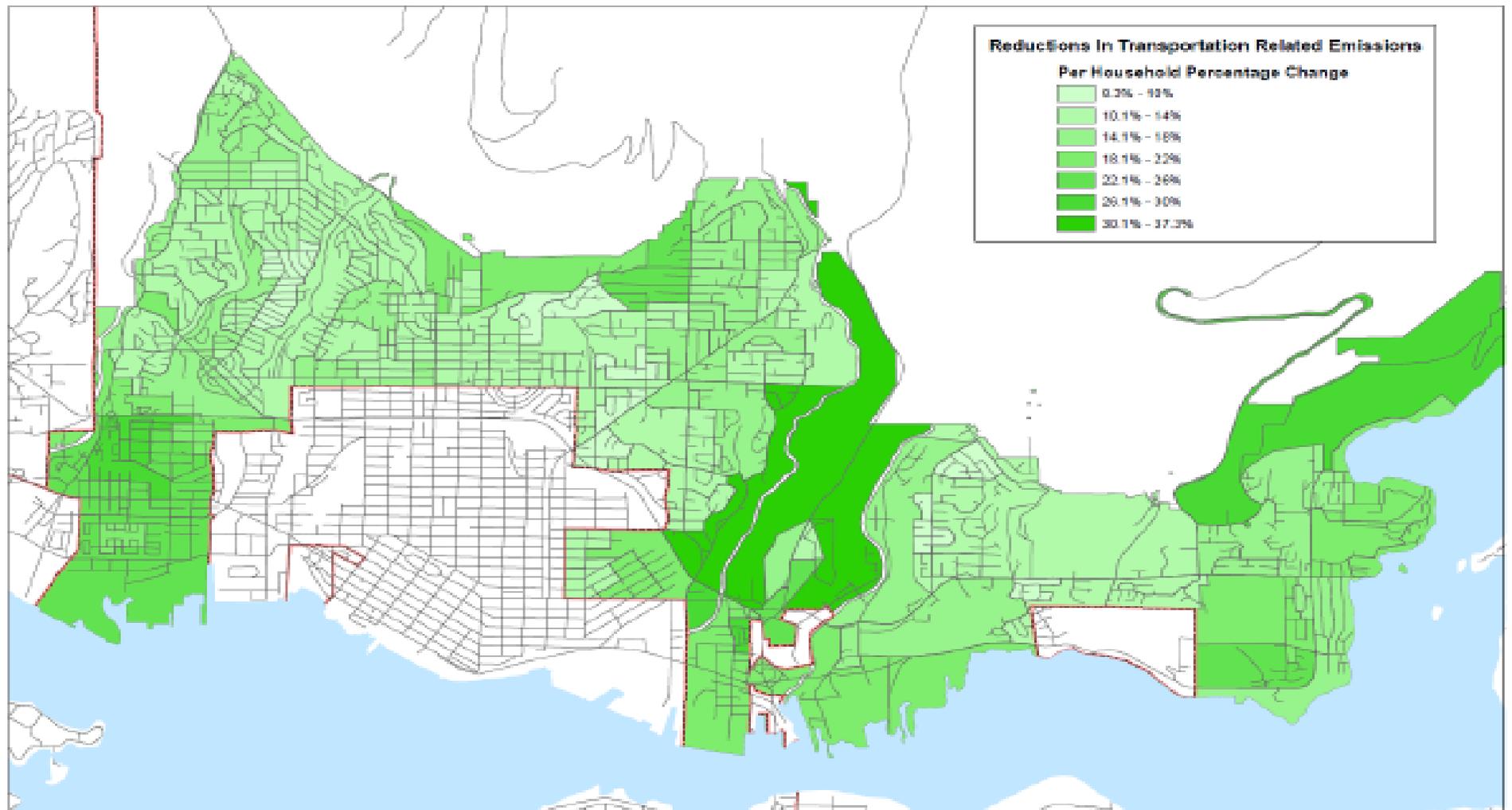
Green



CURRENT SCENARIO 2008 – TRANSPORTATION RELATED EMISSIONS



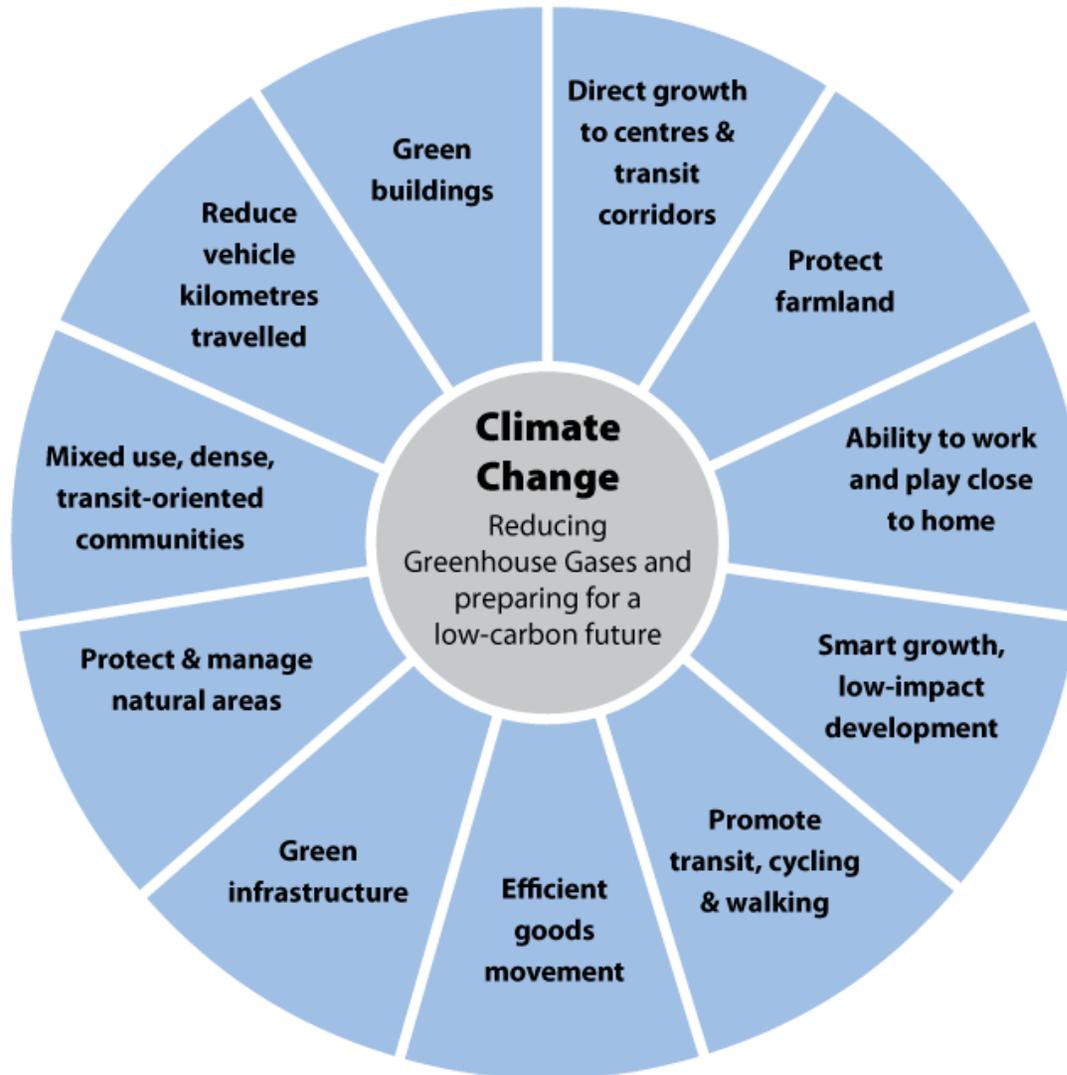
FUTURE SCENARIO 2031 – NET REDUCTION IN TRANSPORTATION RELATED GHGS



Net reductions/ household in transportation related GHGs from 37.3% to 8.3%

FIGURE 5

How Land Use and Transportation Strategies Contribute to Climate Action



Source: Metro Vancouver Regional Growth Strategy – Preliminary Draft



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