

# Planning for Uncertainty

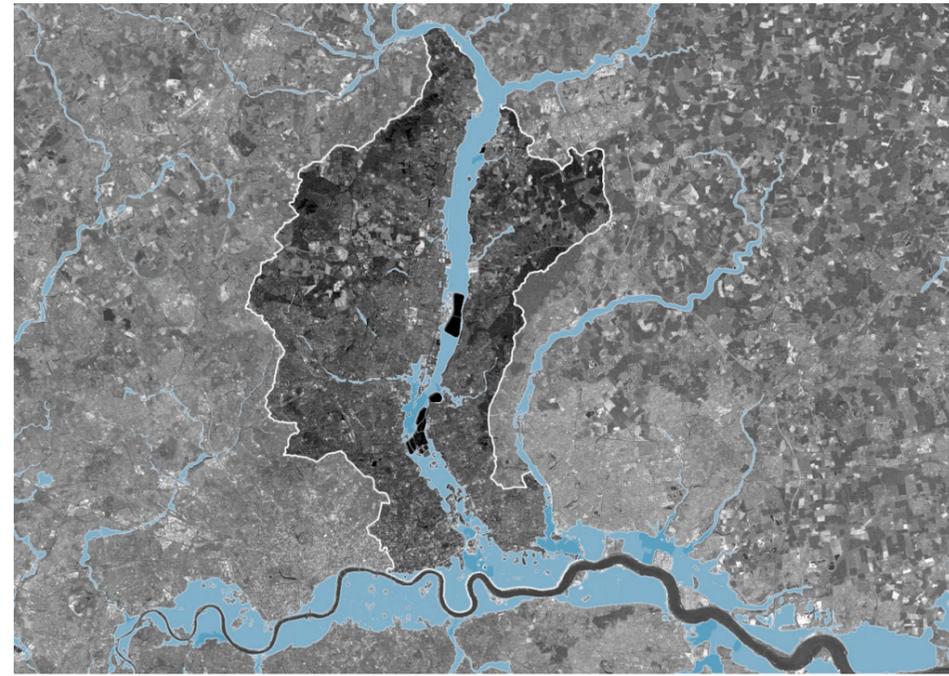
*Adaptation Strategies for Agricultural Self-Reliance in the  
Lower Mainland of British Columbia, Canada*

From TU Delft to Canada

Netherlands



London



Venetian Lagoon



Where?



# British Columbia



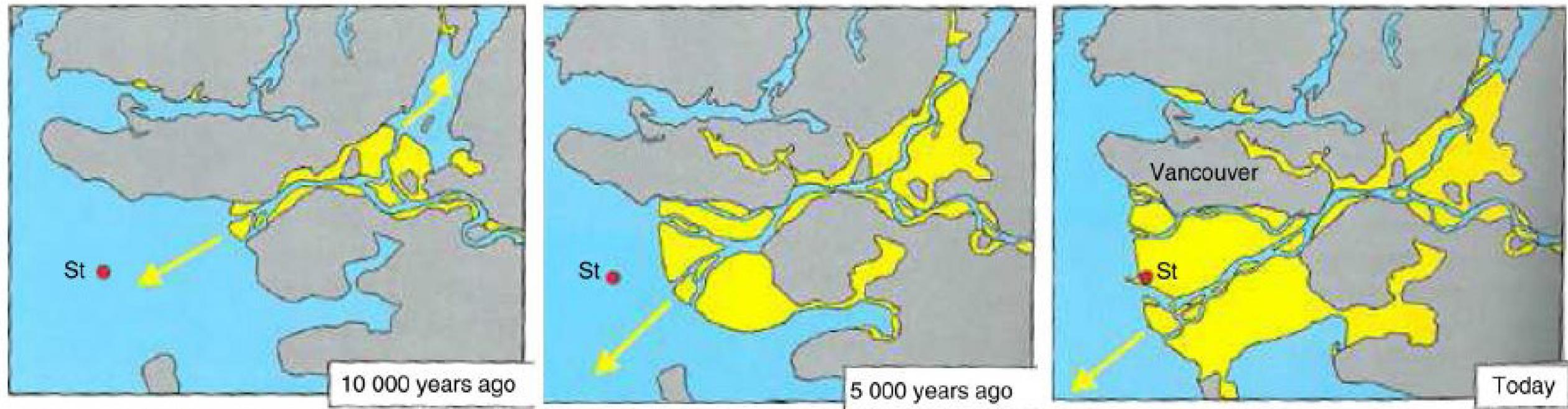
Satellite image of British Columbia. Source: Google Maps & <https://catalogue.data.gov.bc.ca/dataset>

# The Lower Mainland

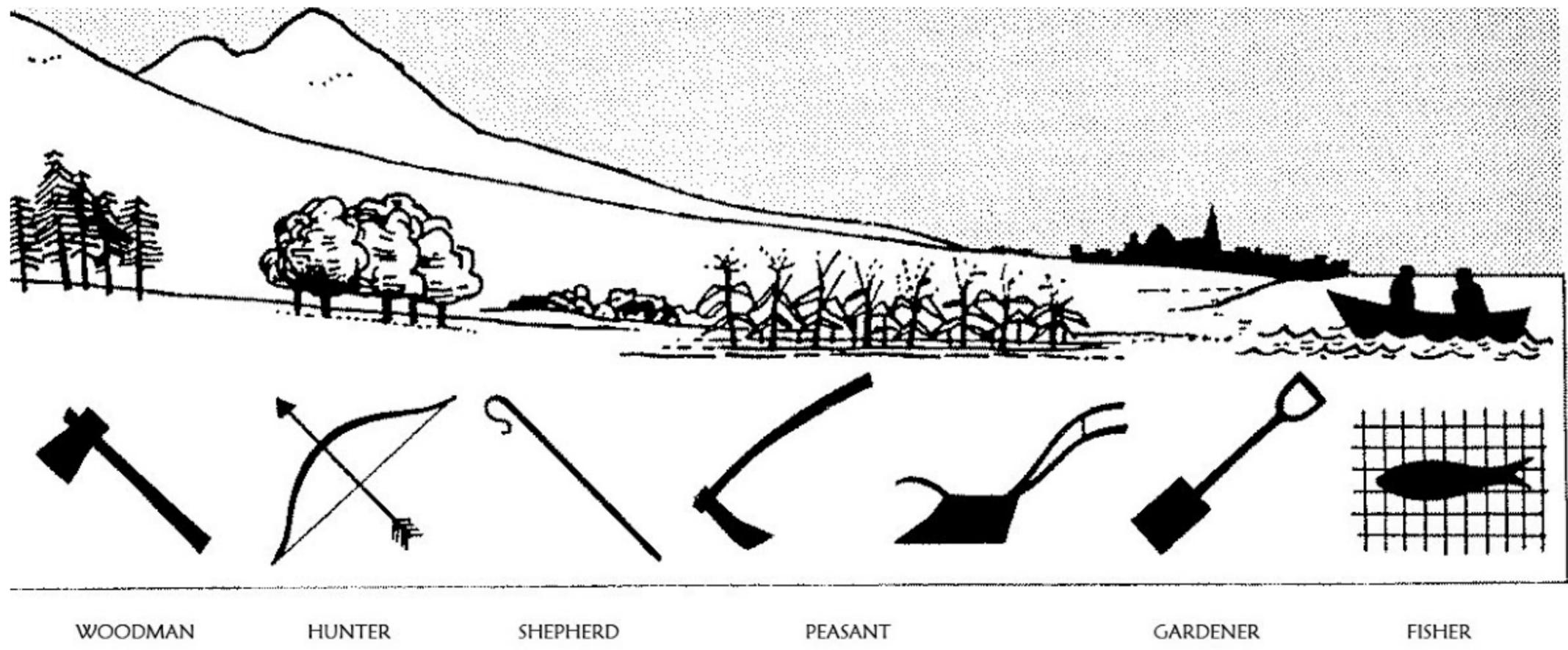


How did the region form?  
What does it support?

Evolution of the Fraser River Delta during the Holocene



 **Holocene sediments**  
*floodplains, fans and peat bogs*



WOODMAN

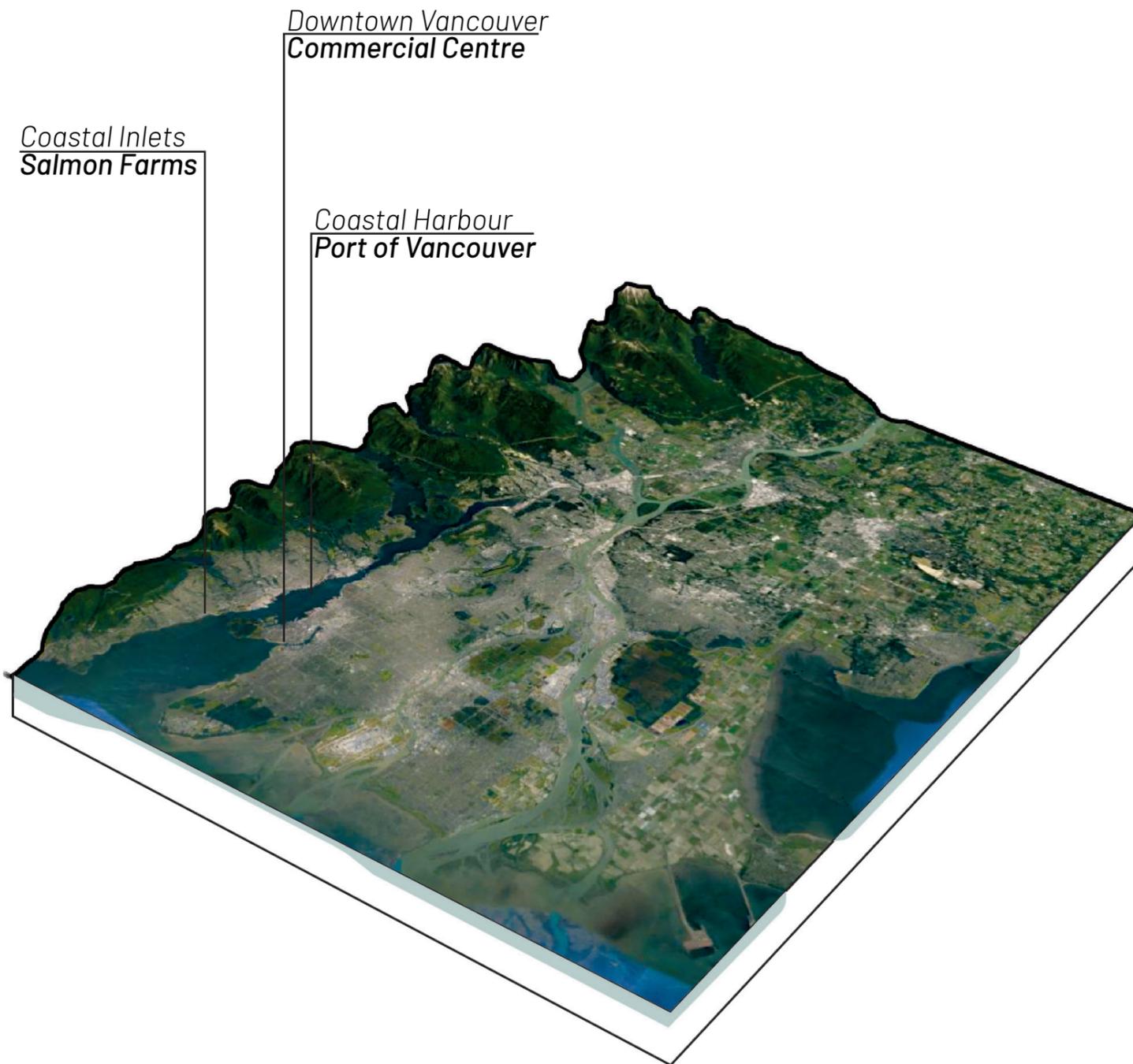
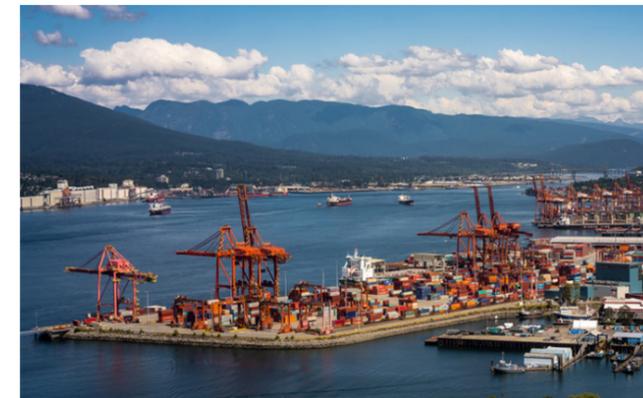
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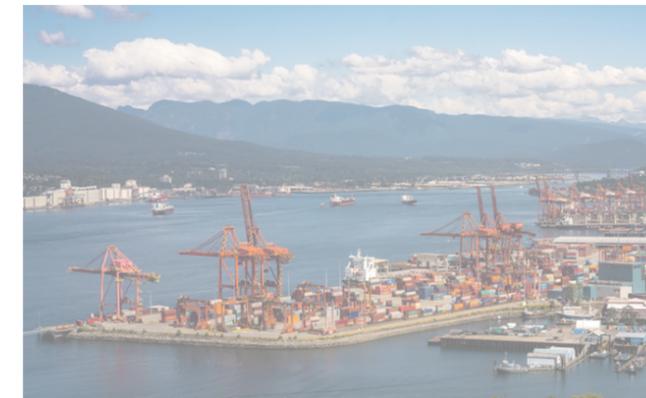
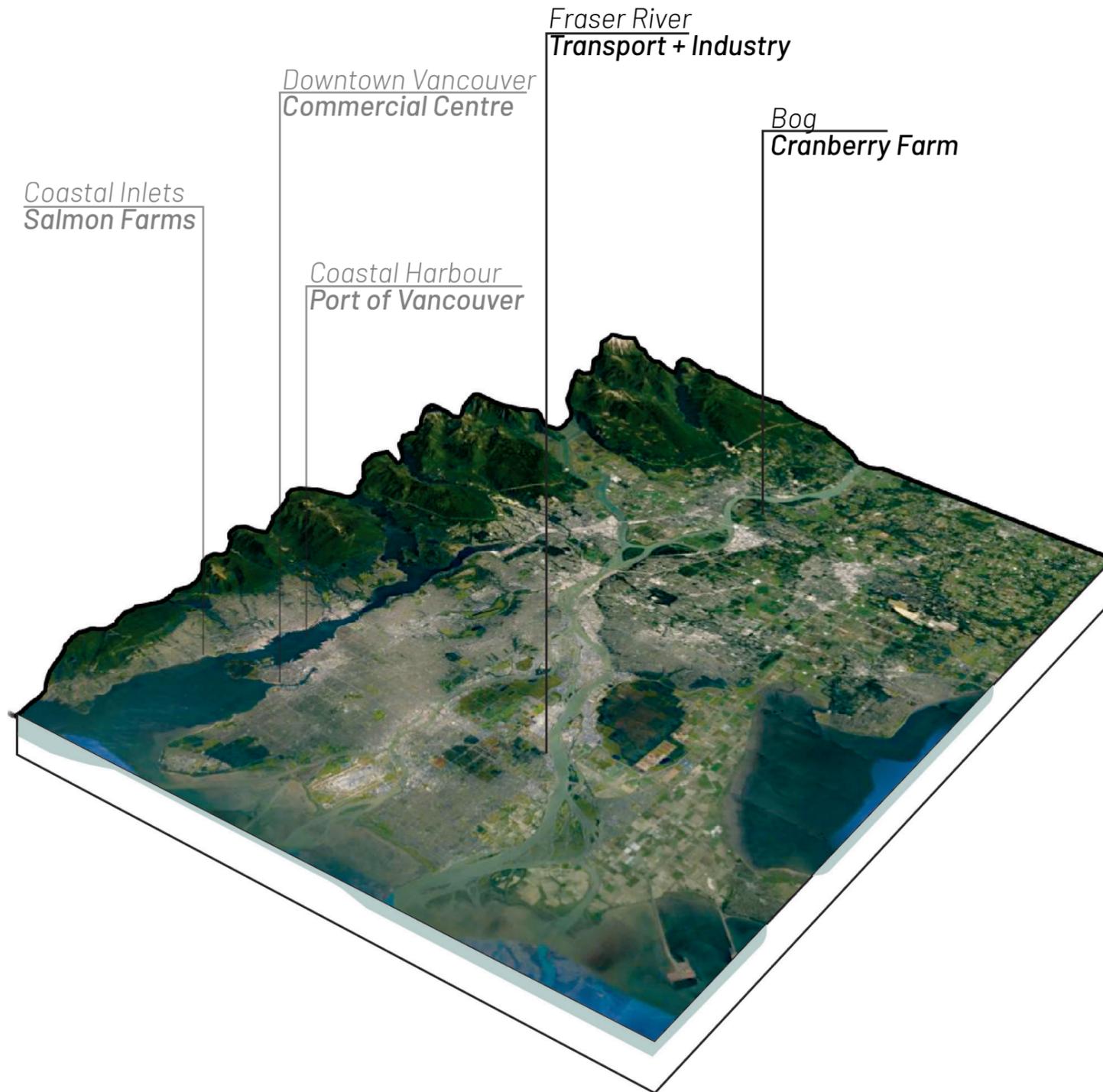
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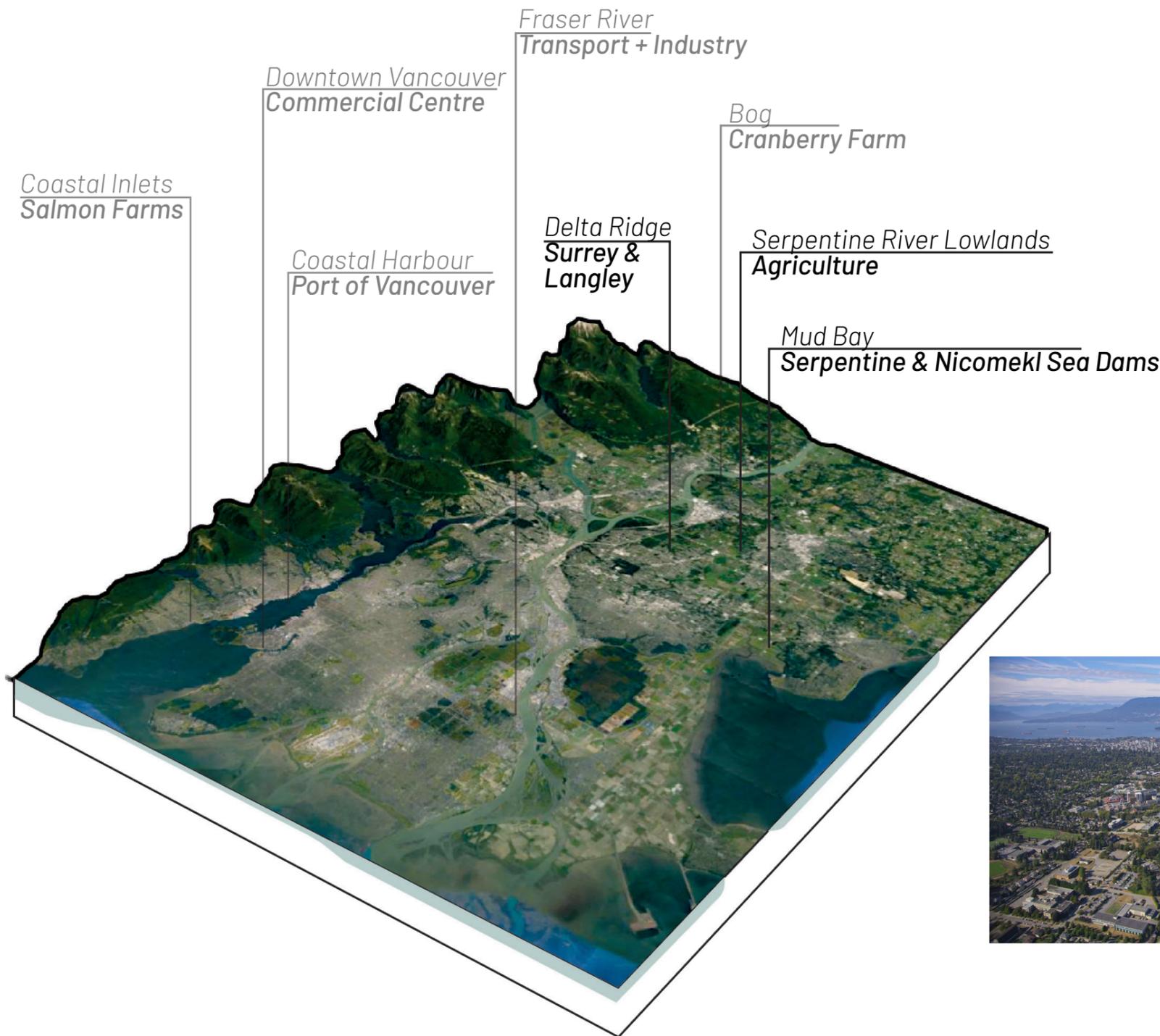
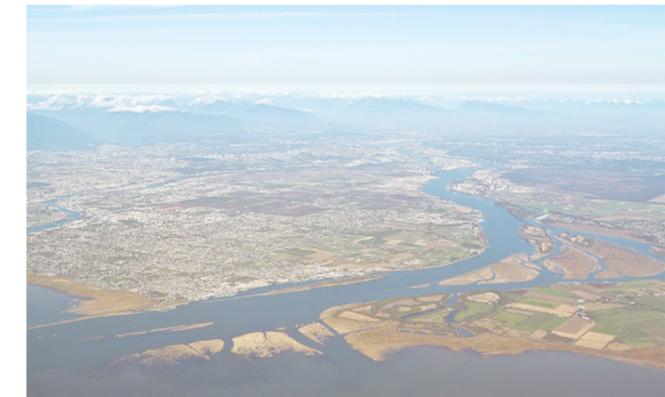
PEASANT

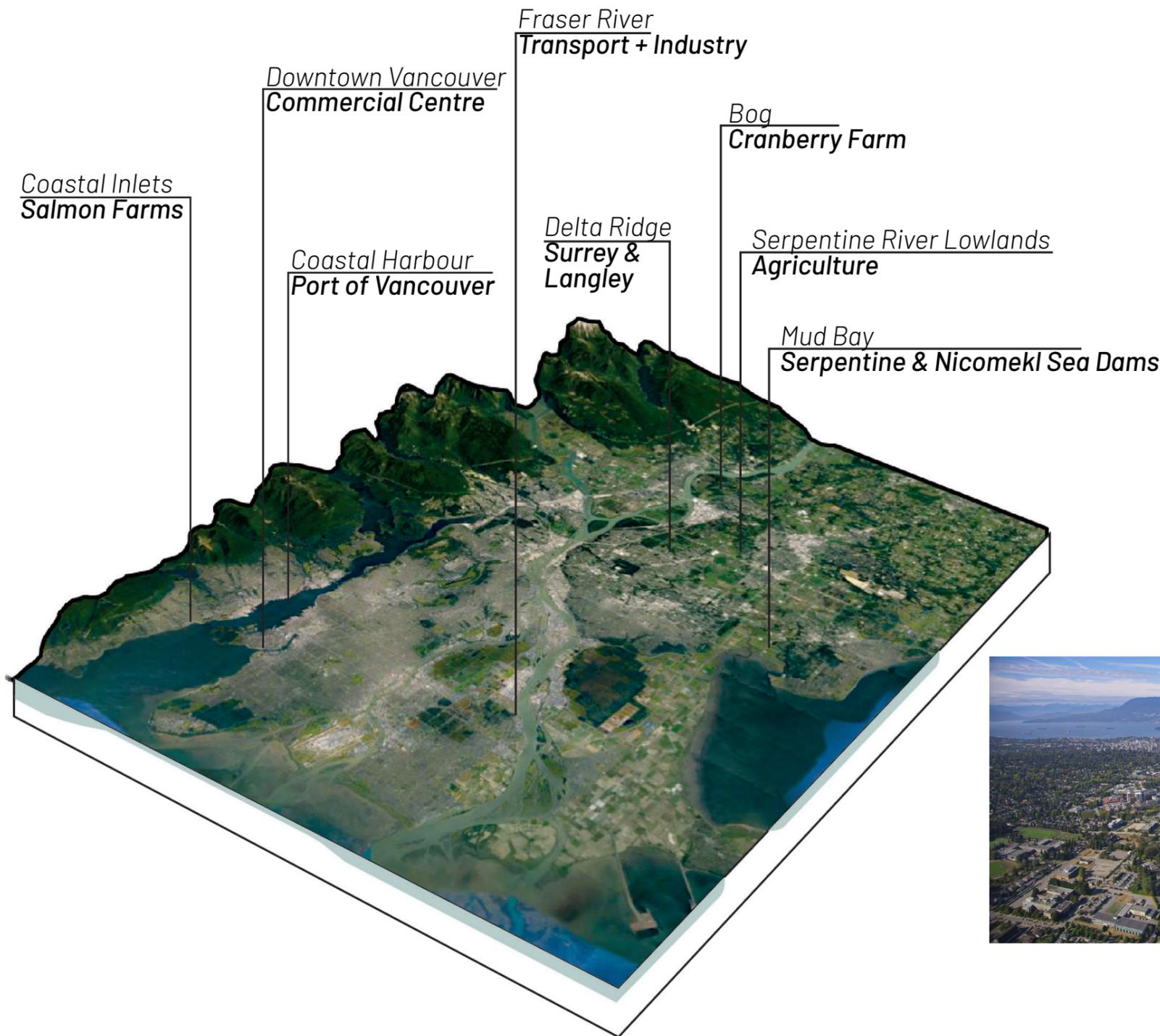
GARDENER

FISHER



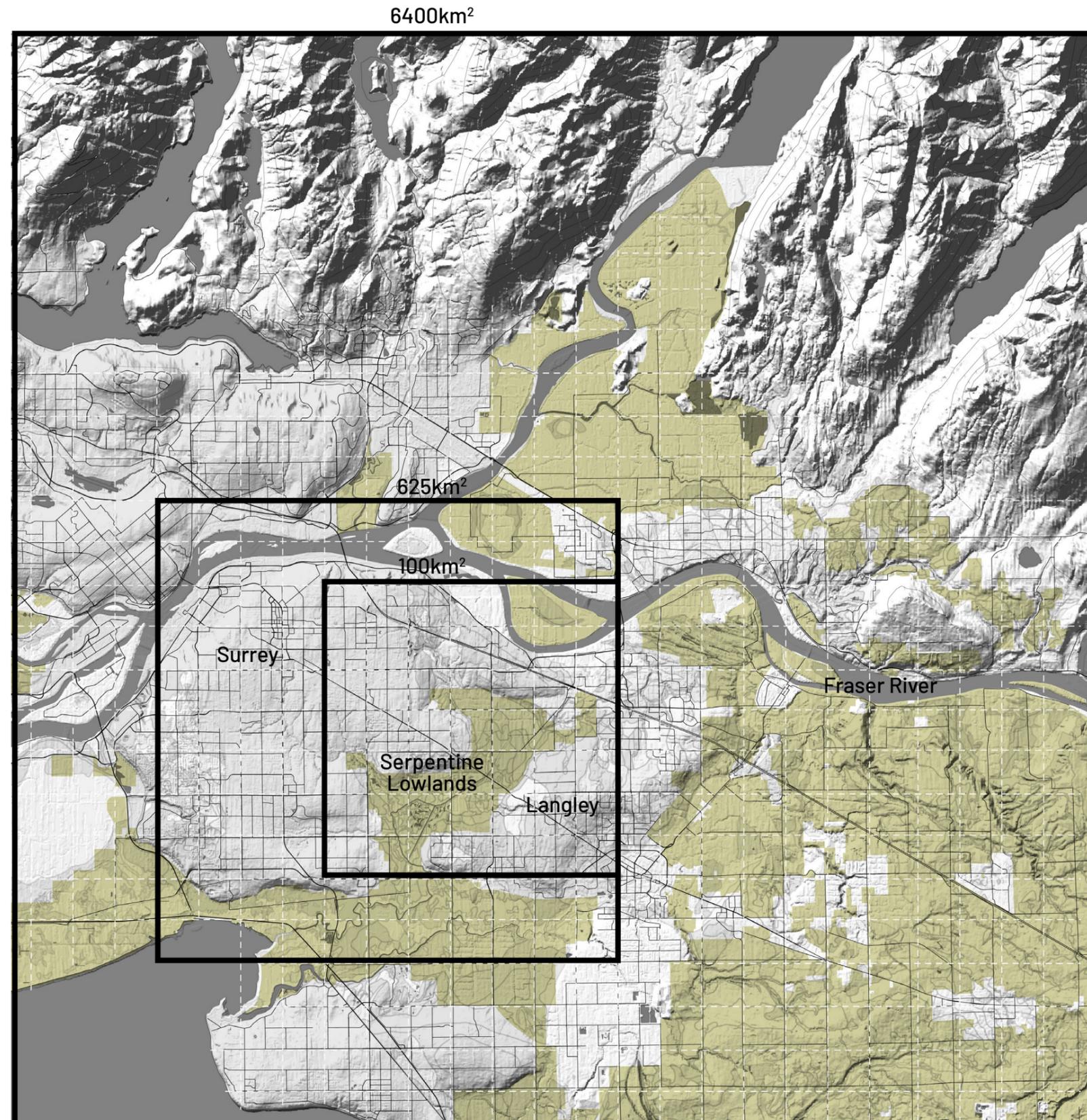




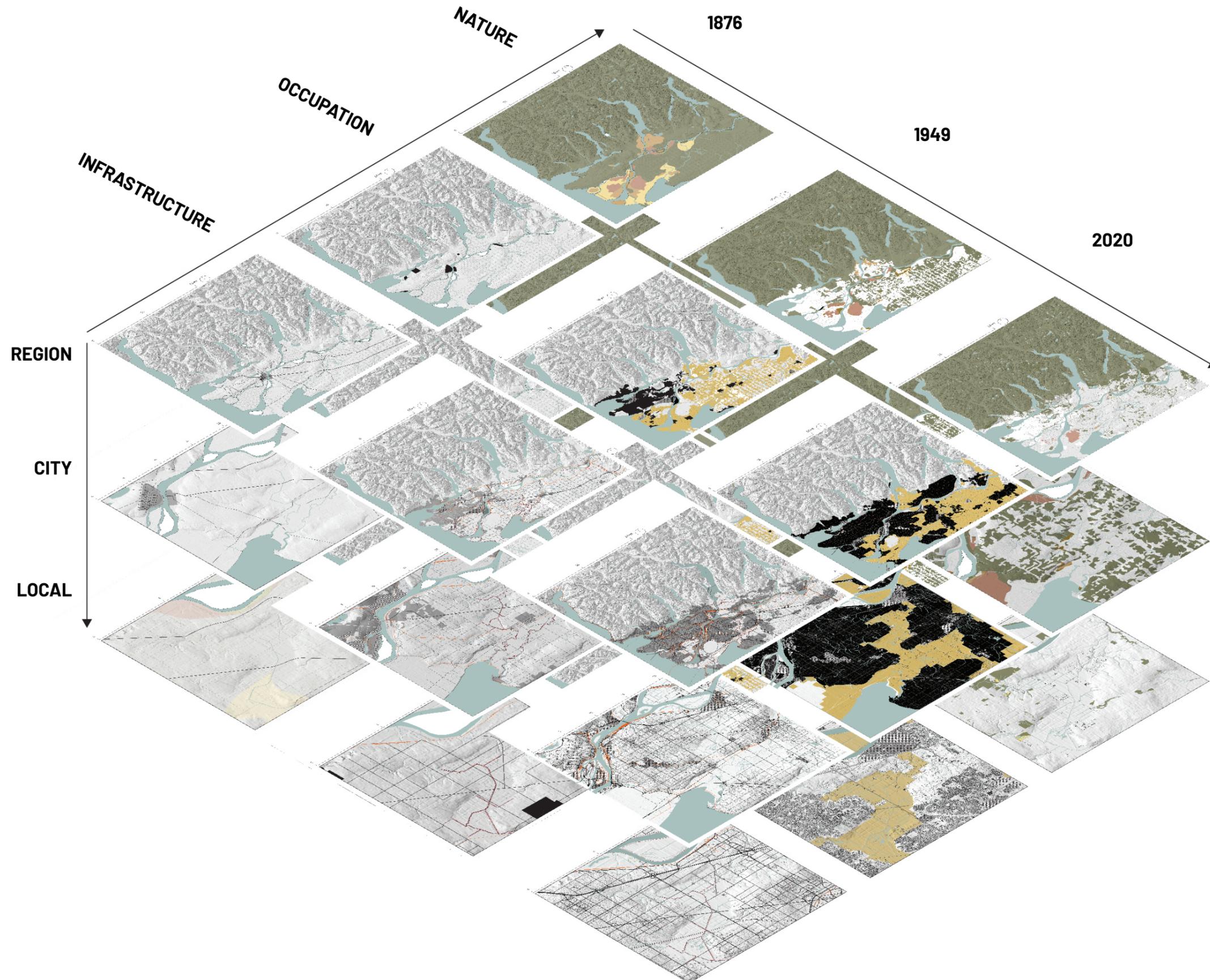


How did the territory transform over time?  
What structural elements have remained constant?  
What functions does this structure support?

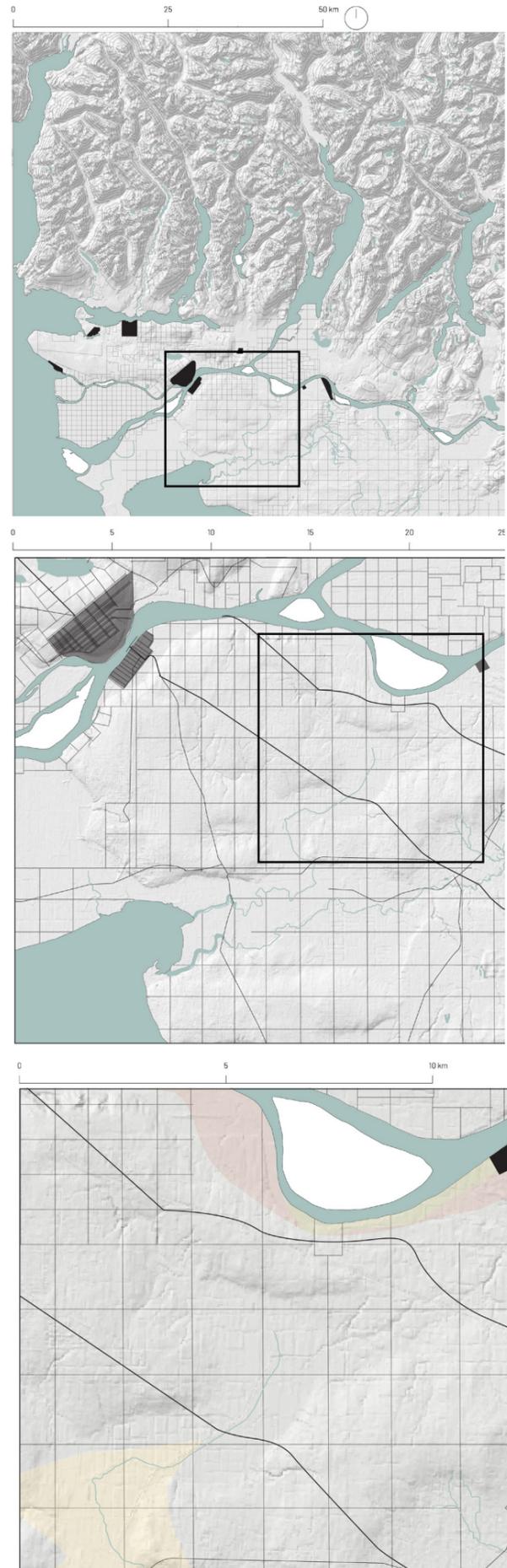
# Selected Frames



# Layered Analysis



1876



Regional Scale

City Scale

Community Scale

urban areas

Source: Spatial data from DataBC

# Occupation



**Discovery of gold on the Fraser River and of New Westminster**

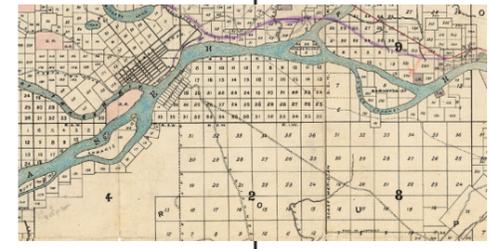
1857-1858

*New Westminster becomes a major outfitting point for prospectors coming to the Fraser Gold Rush*

**Block and Range survey of Joseph Trutch**

1859

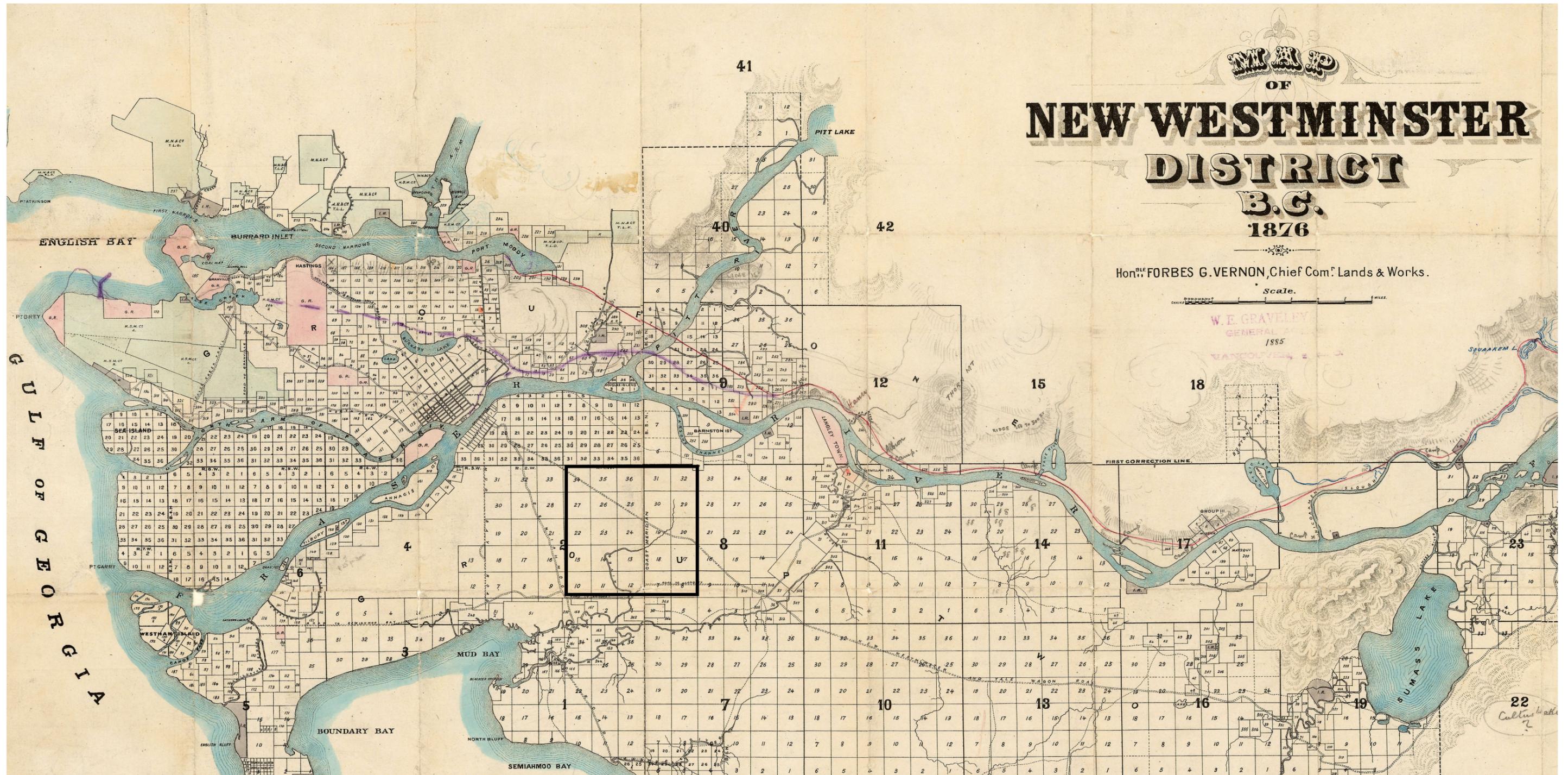
*The first Block and Range survey of Joseph Trutch in 1859 - which survey covered Brownsville - to the township plans of the Colony of British Columbia*



**Township of New Westminster surveyed by Britton, Reye & Company using both the Block and Range Survey and Jefferson Grid**

1876

*Intended to aid settlers in selecting land,*

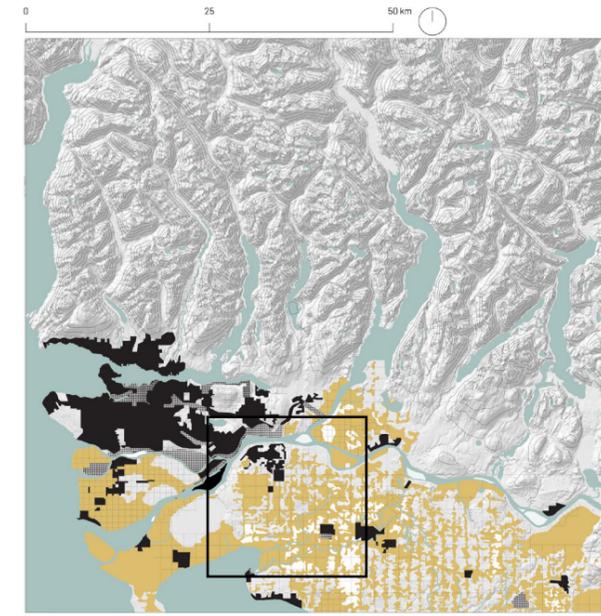
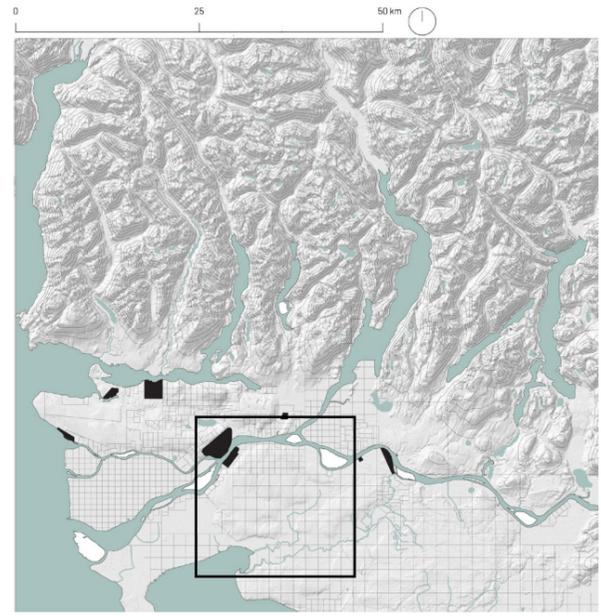


Township of New Westminster surveyed by Britton, Reye & Company 1876

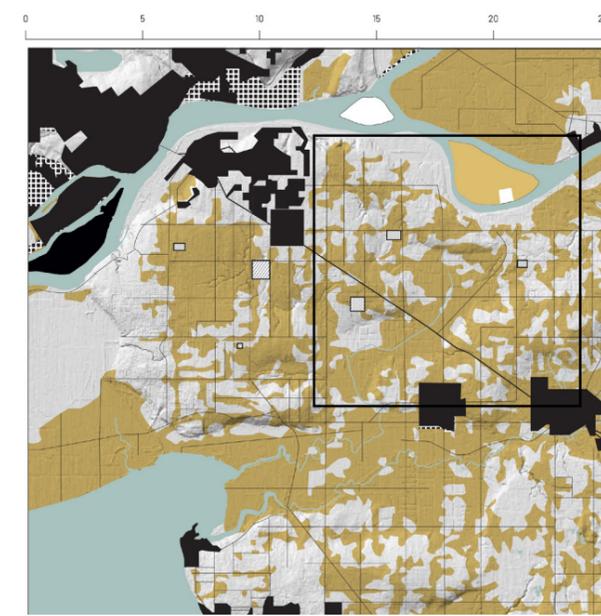
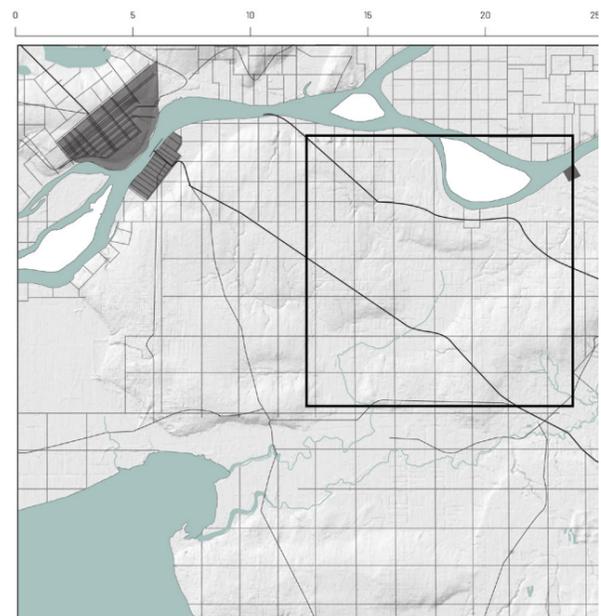
1876

1949

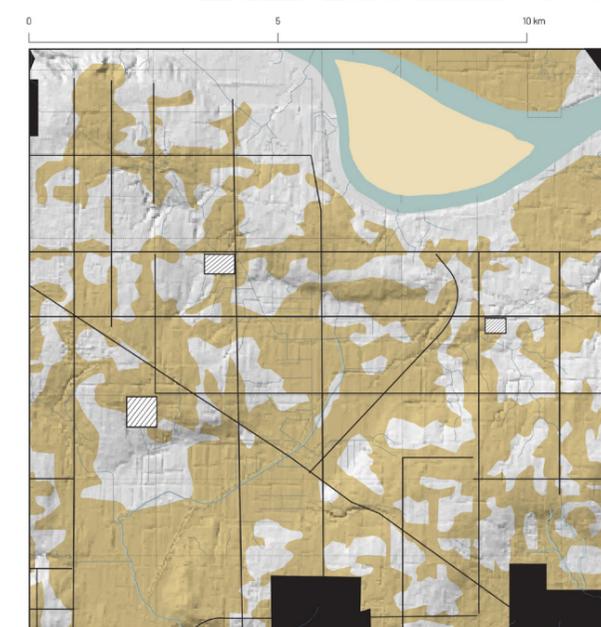
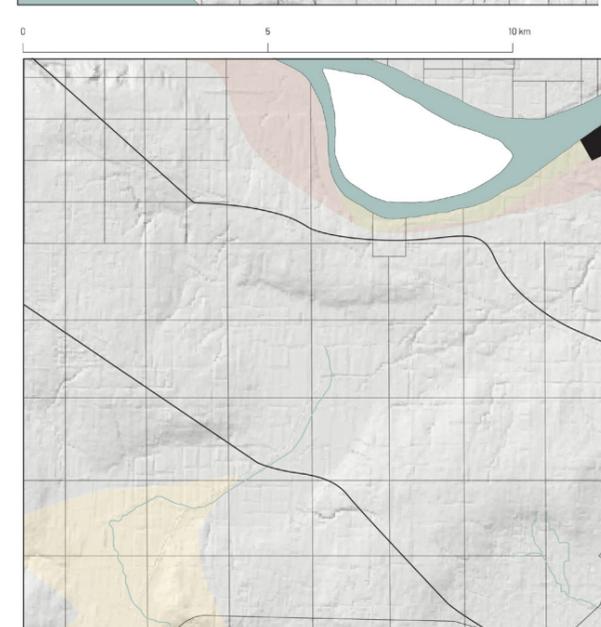
Regional Scale



City Scale



Community Scale



urban areas  
 agriculture

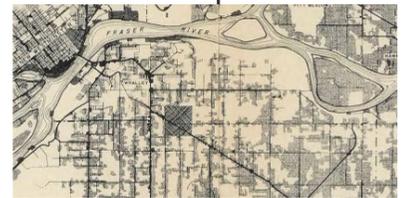
Source: Spatial data from DataBC

# Occupation

Lower Mainland Regional Planning Board publishes 'The Lower Mainland Looks Ahead'

1949

First comprehensive planning document for the region that laid out priorities for the development of the region in the 20th century - emphasizing the importance of preserving agricultural land



Designation of the Agricultural Land Reserve (ALR)

1973

ALR is one of the earliest examples in North America using regional zoning laws to permanently preserve farmland and promote local food production.



1876

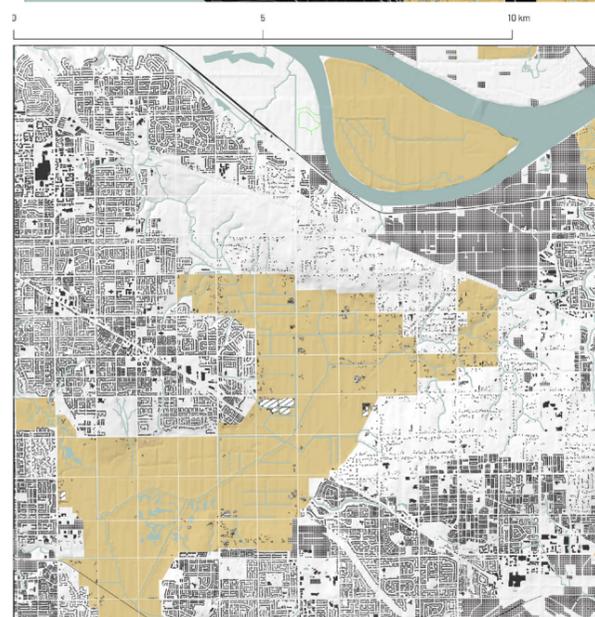
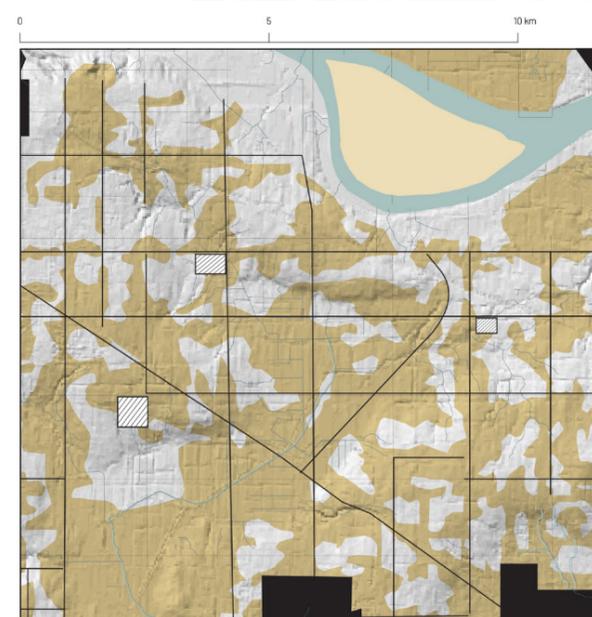
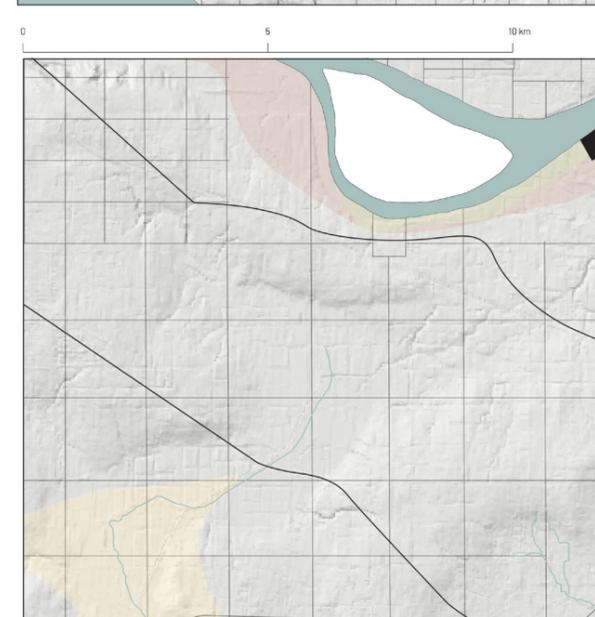
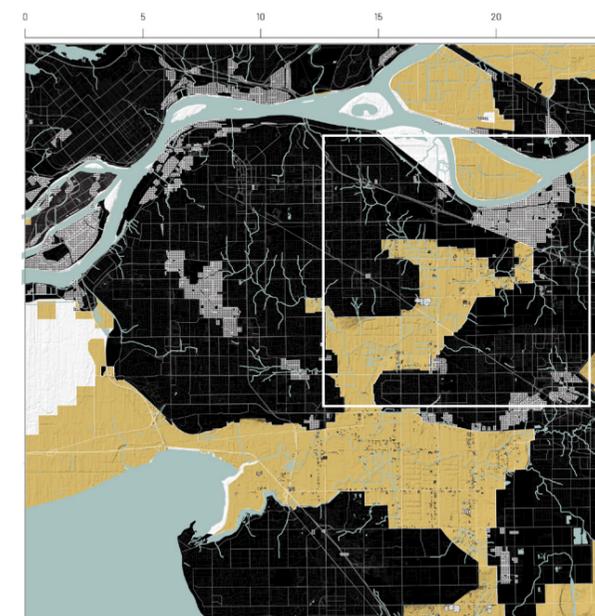
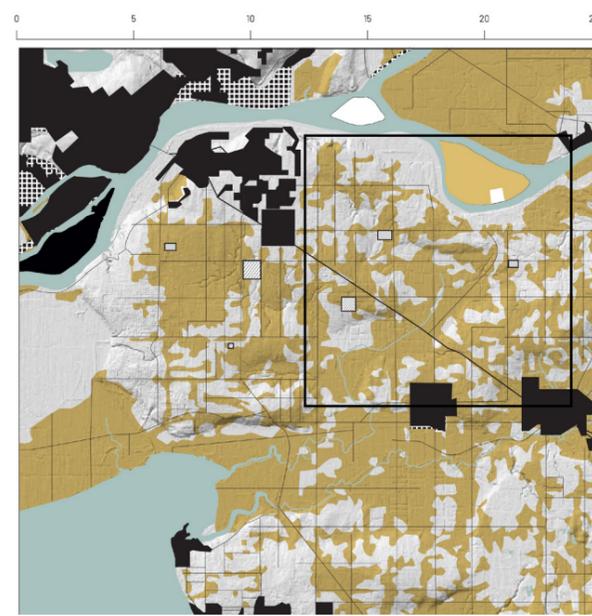
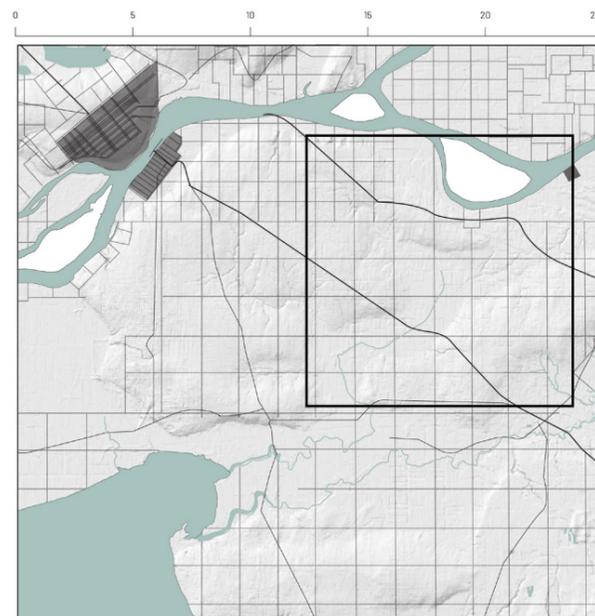
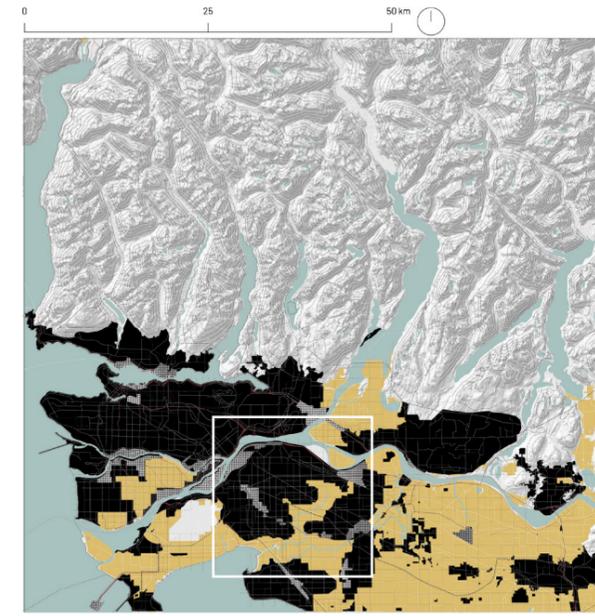
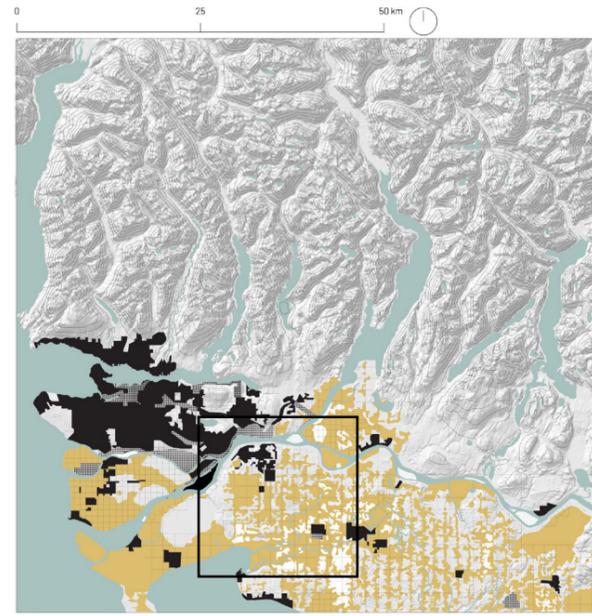
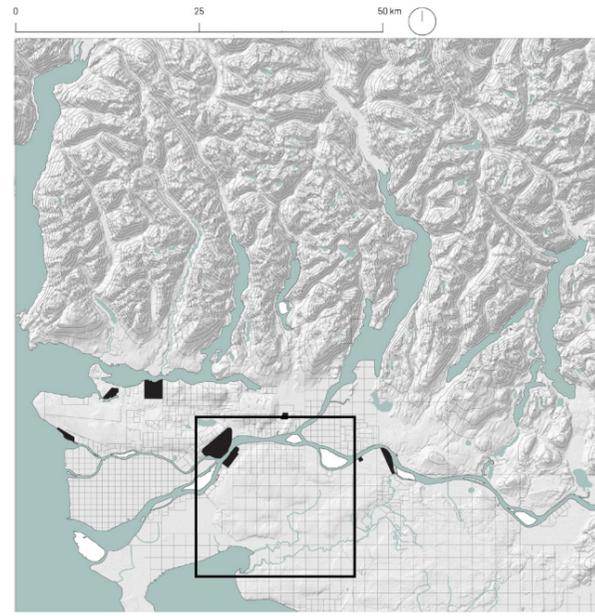
1949

2020

Regional Scale

City Scale

Community Scale



-  Farms
-  industrial platforms
-  urban areas
-  agriculture

Source: Spatial data from DataBC

# Occupation

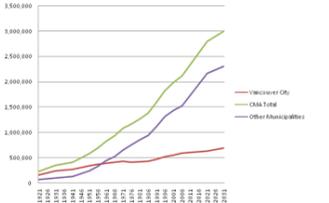
**Fastest Growing Region in Canada**



1971-2001

*In only 30 years, the Lower Mainland doubles in population size from 1.1 million to 2.2 million - resulting in sprawling urban development throughout the region*

Vancouver Population Growth and Projections 1921-2031



**The Lower Mainland is now one of Canada's largest metropolitan regions**

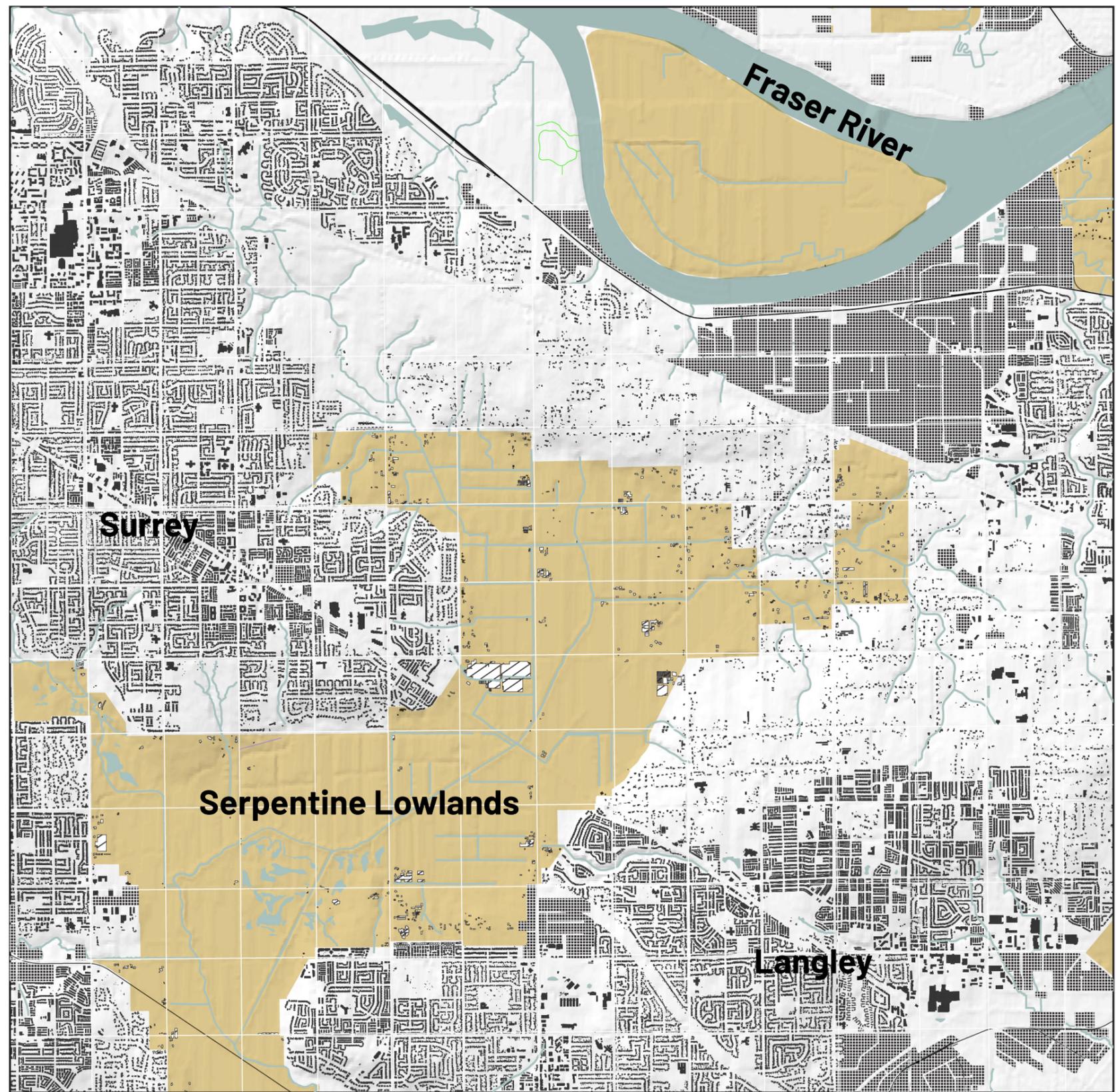
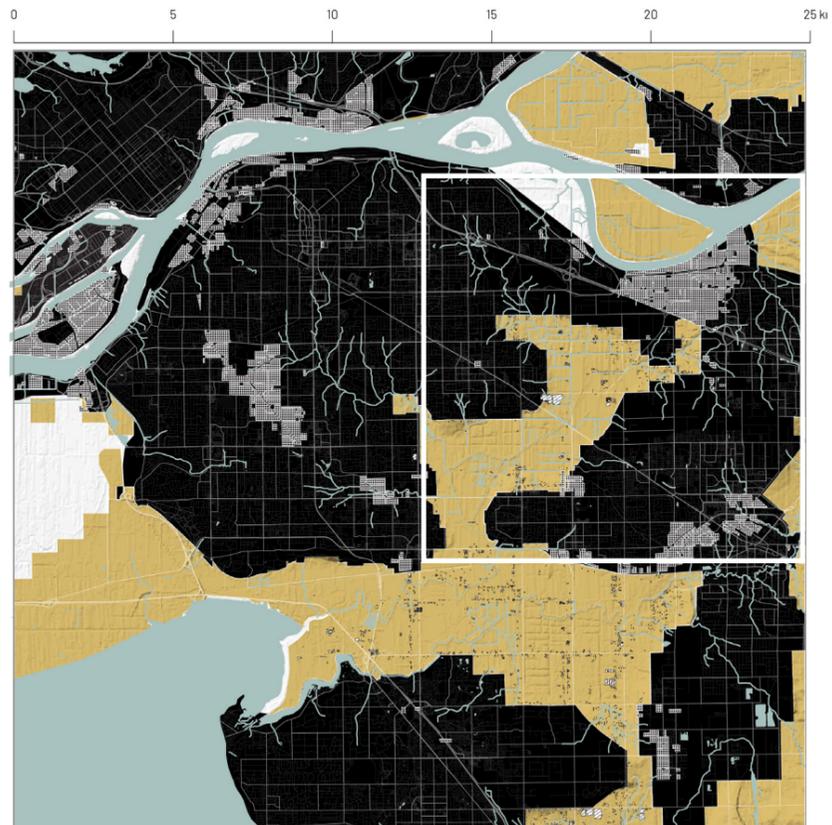
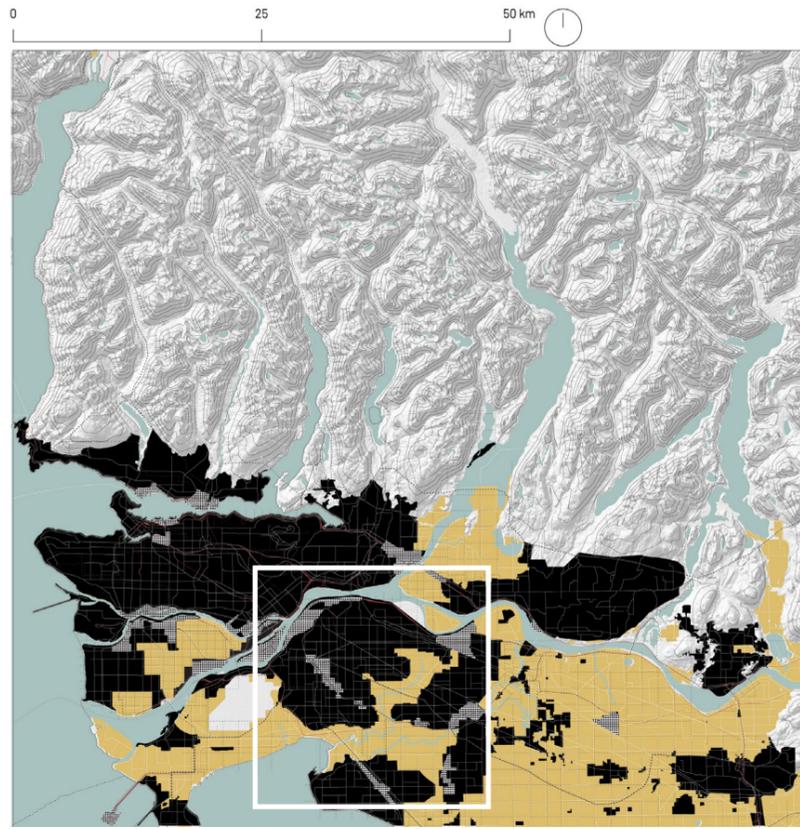


2020

*Current population is 2.4 million (Representing 60% of British Columbia's total population)*

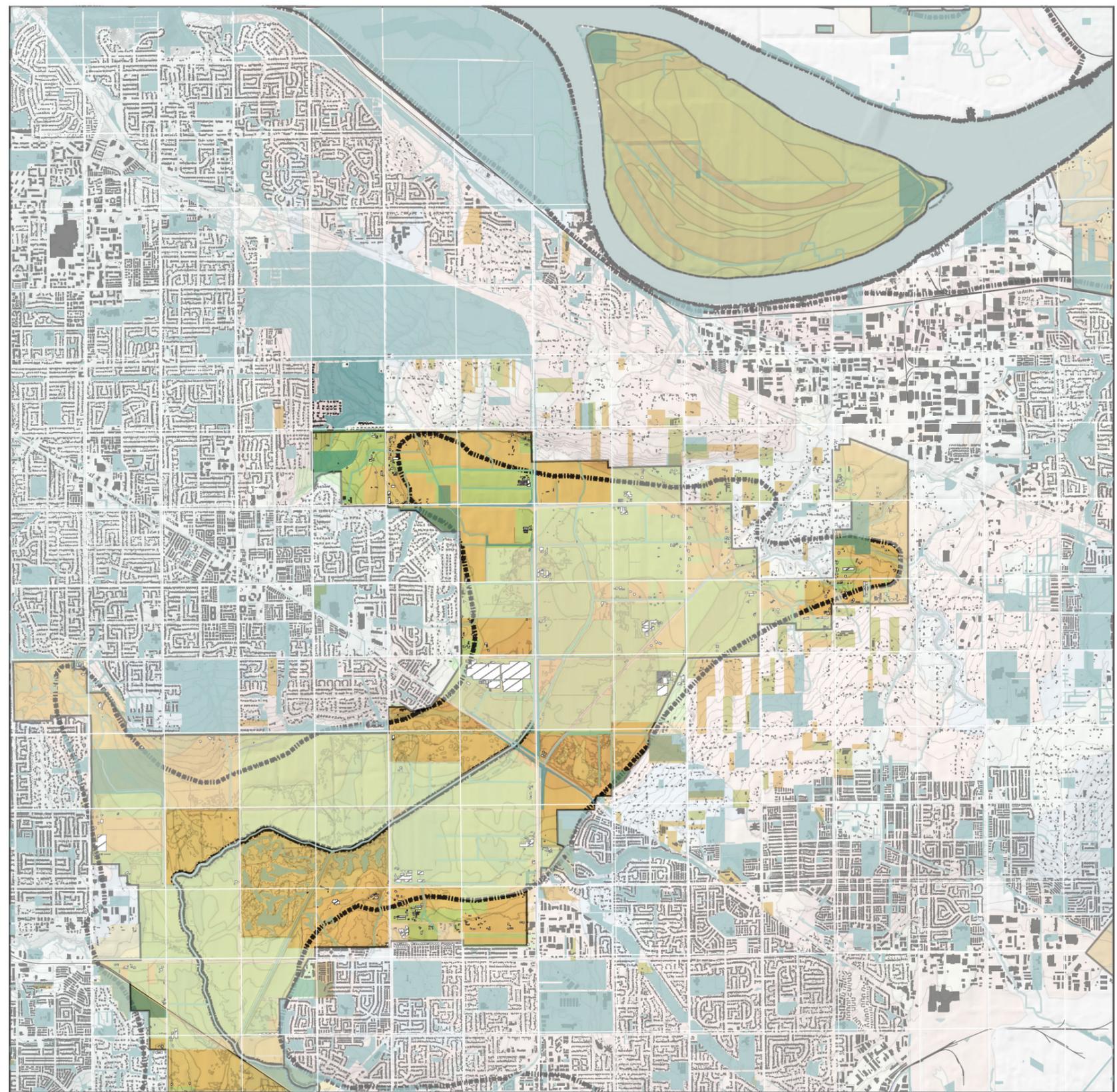


# Occupation 2020



-  Farms
-  industrial platforms
-  urban areas
-  agriculture

# Occupation Potential for Transformation

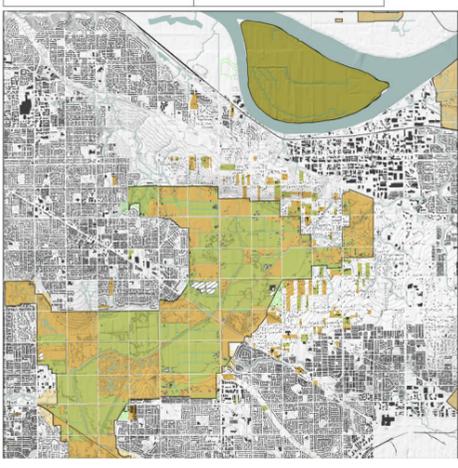


**Ownership**



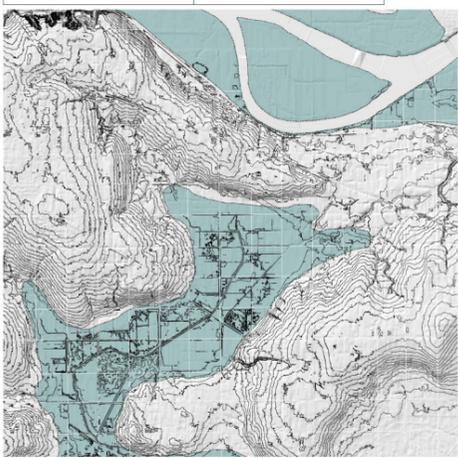
- ALR
- Unknown
- Private
- Municipal
- Crown Agency (Federal)
- Crown Agency (Provincial)

**Active Farms**



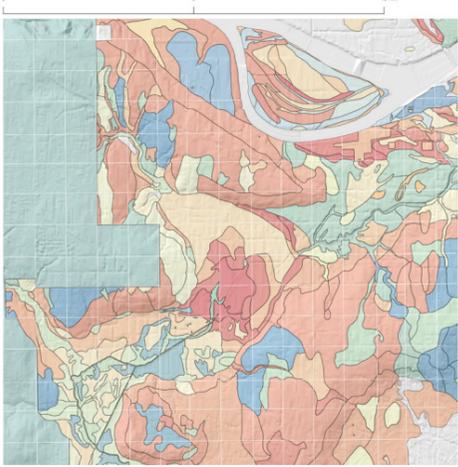
- Not used for Farming
- Active Farm

**Flood Risk**



- Flood Zone

**Soil Quality**

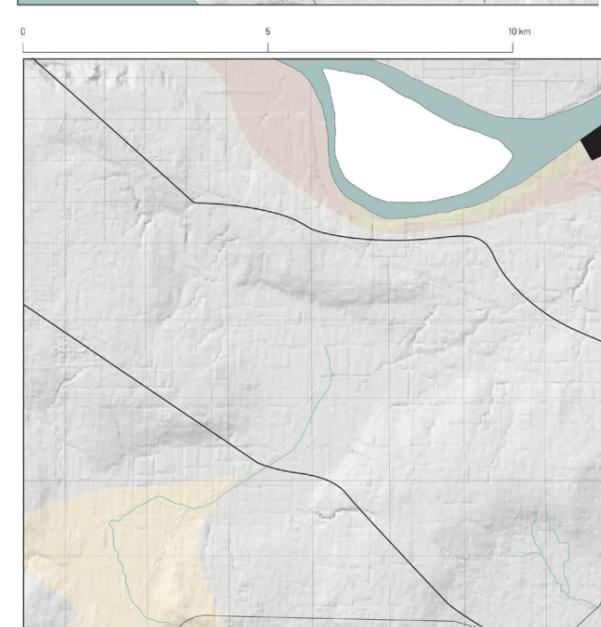
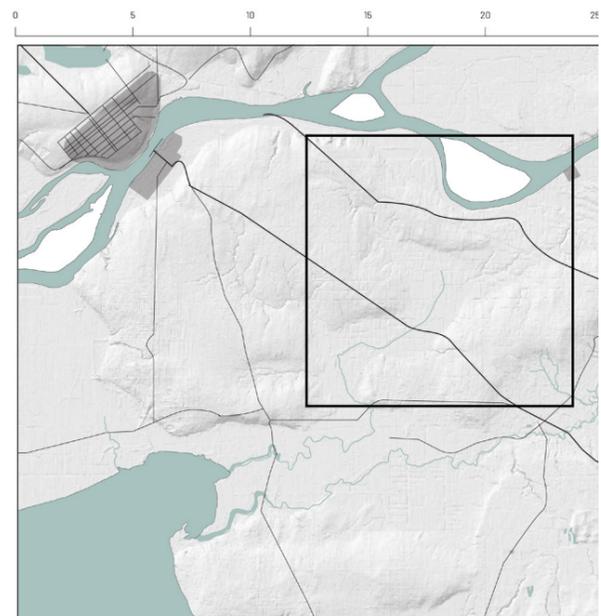
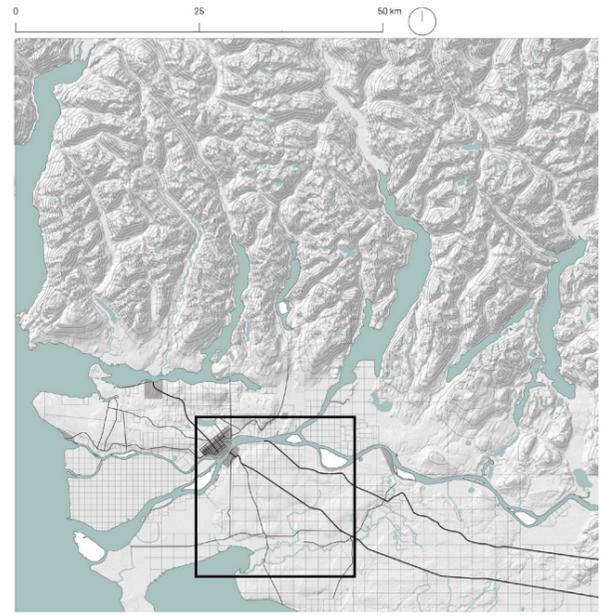


- Silty Clay
- Organic
- Glaciomarine Deposits

- Flood Zone
- ALR
- Unknown
- Private
- Municipal
- Crown Agency (Federal)
- Crown Agency (Provincial)
- Not used for Farming
- Active Farm

Source: Spatial data from DataBC

1876



Regional Scale

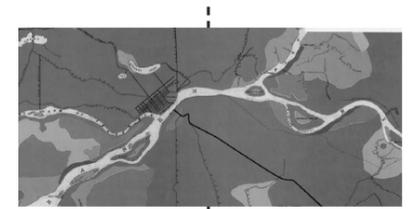
City Scale

Community Scale

- transmission lines
- ⋯ shipping
- dikes
- rail
- roads

Source: Spatial data from DataBC

# Infrastructure



**Old Wagon Road between New Westminster and Yale constructed**

1875

*This road was built to transport people and goods into the Fraser Valley (particularly gold prospectors) and was intended to relieve the pressure on the Fraser River which had been used by steam river boats to transport people into the valley*

**Canadian Pacific Railway constructed**

1881-1885

*This milestone in Canadian history connected British Columbia with the rest of the country and made it possible for people and goods to travel between the east and west.*



**Fraser River Floods**

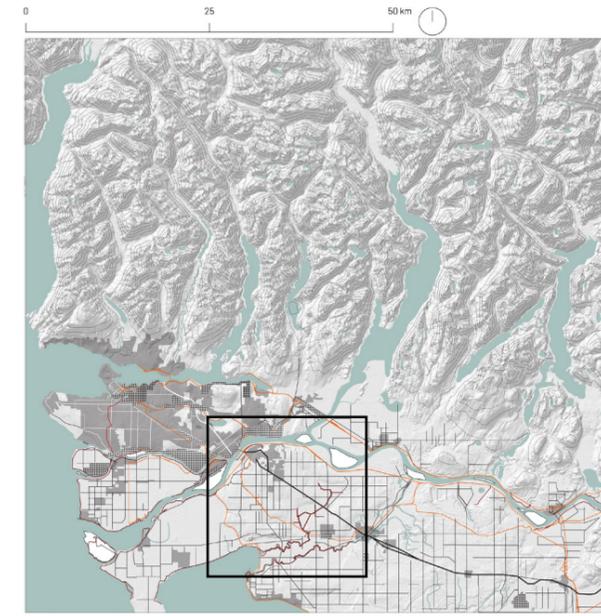
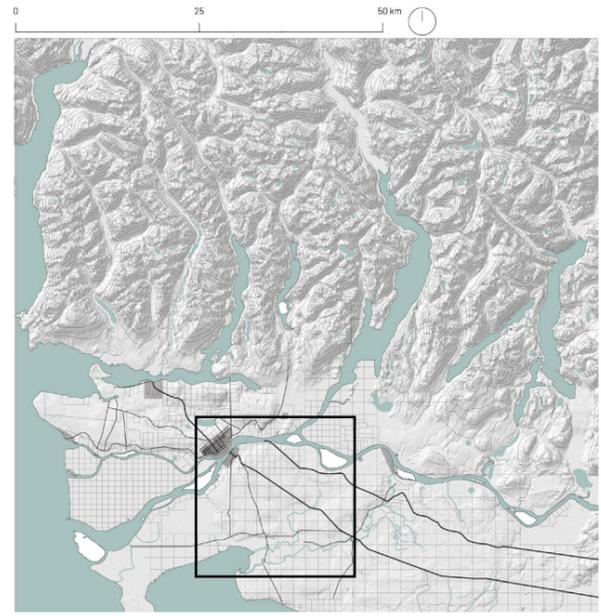
1894

*The flood was the largest on record however, property damage was limited because settlement was sparse.*

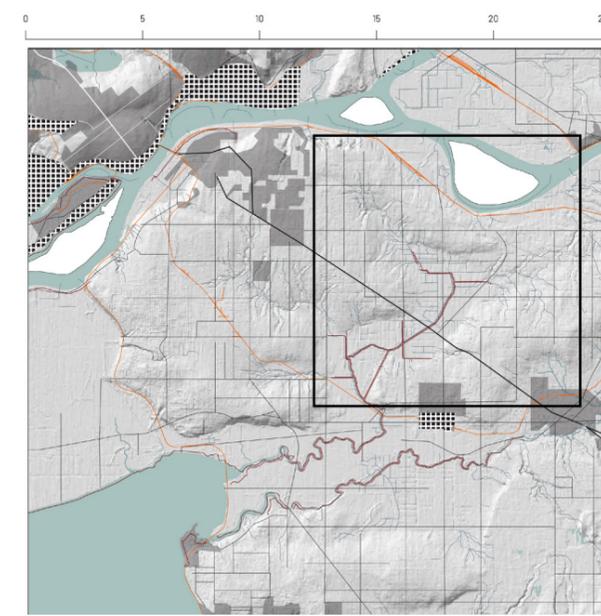
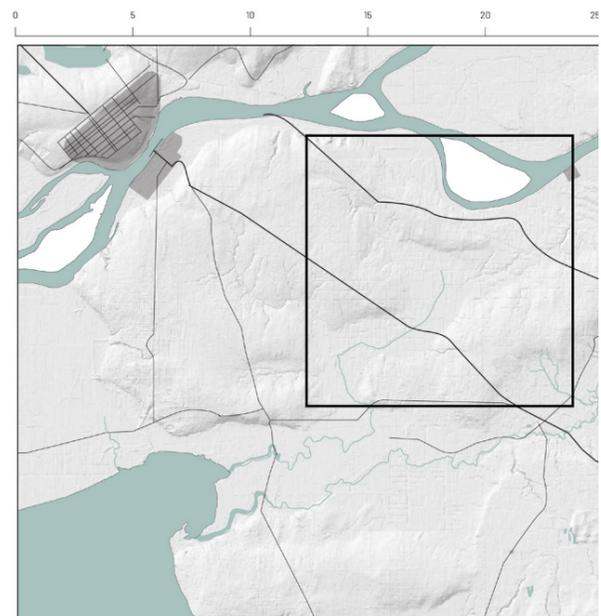
1876

1949

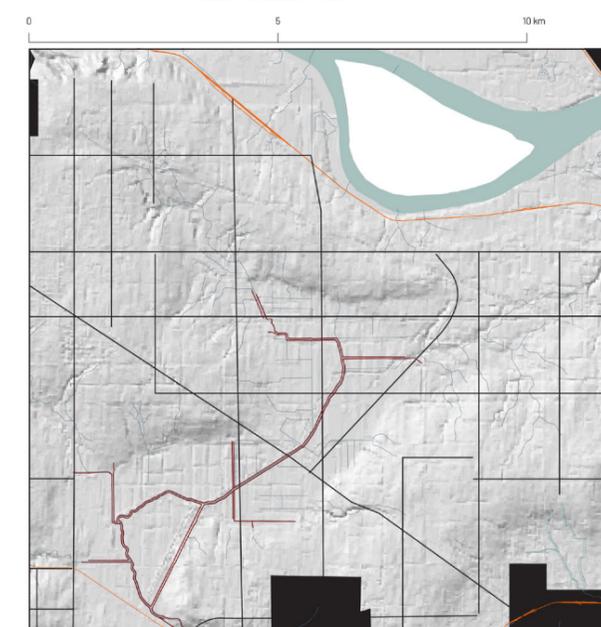
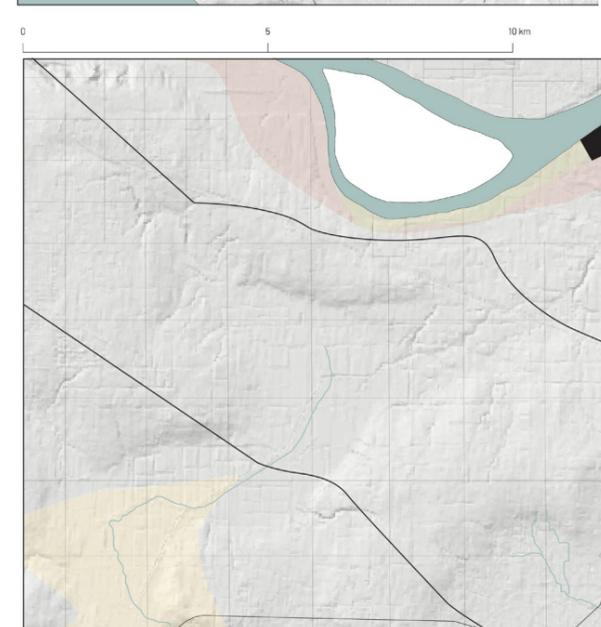
Regional Scale



City Scale



Community Scale



- transmission lines
- ⋯ shipping
- dikes
- rail
- roads

Source: Spatial data from DataBC

# Infrastructure



**Surrey Dyking District Established**

○  
1911

*The reason for the formation of the Surrey Dyking District was to provide a taxing authority to enable the construction of a dam across each river with six sets of tide activated flood-gates*

**Trans-Canada Highway 1 completed**

○  
1941



**Fraser River Floods**

○  
1948

*Because of increased development and population growth in the floodplain, the impacts were much greater than in 1894*

# Infrastructure



**Regular dredging of the Serpentine River by the Surrey Dyking District**

1957

*New Westminster becomes a major outfitting point for prospectors coming to the Fraser Gold Rush*

**Surrey Coastal Flood Adaptation Strategy implemented**

2019

*One of the first programs of its kind in Canada, CFAS was a multi-year undertaking that identified the current and potential impacts of climate change on Surrey's large coastal floodplain area*



**Fraser Valley Innovation Corridor**

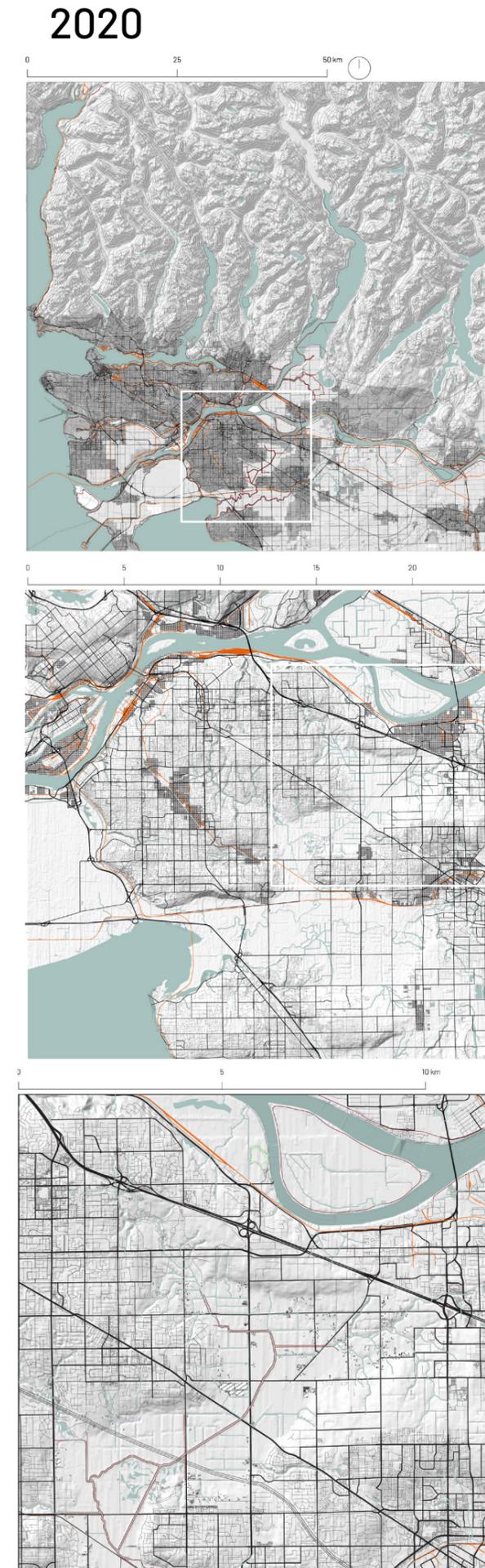
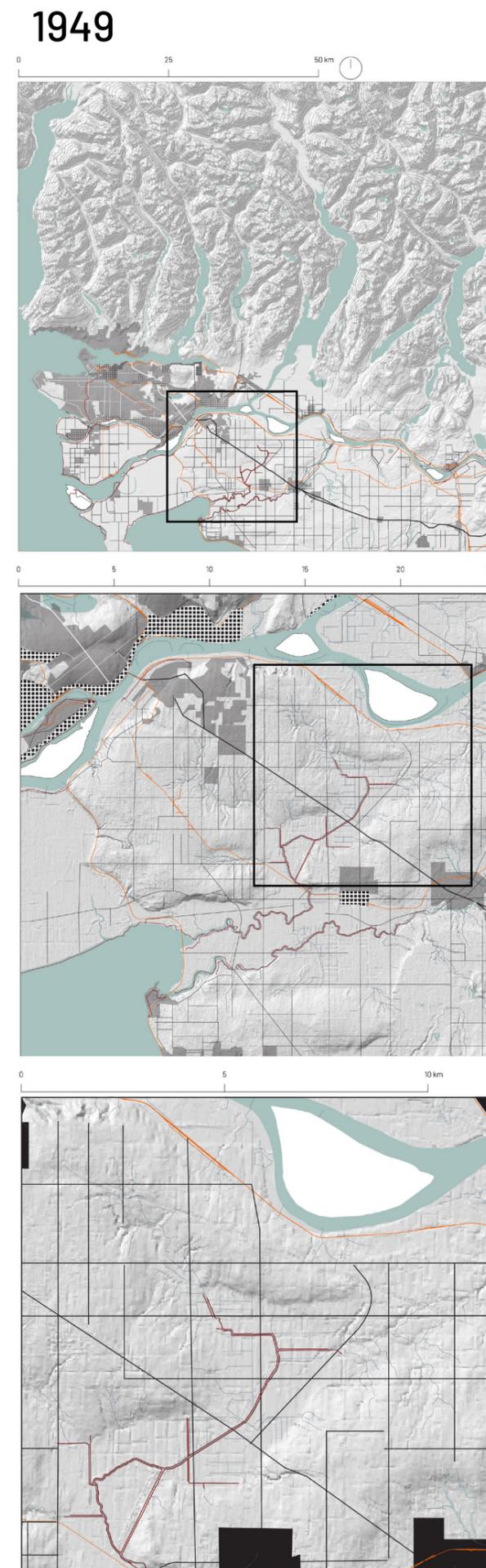
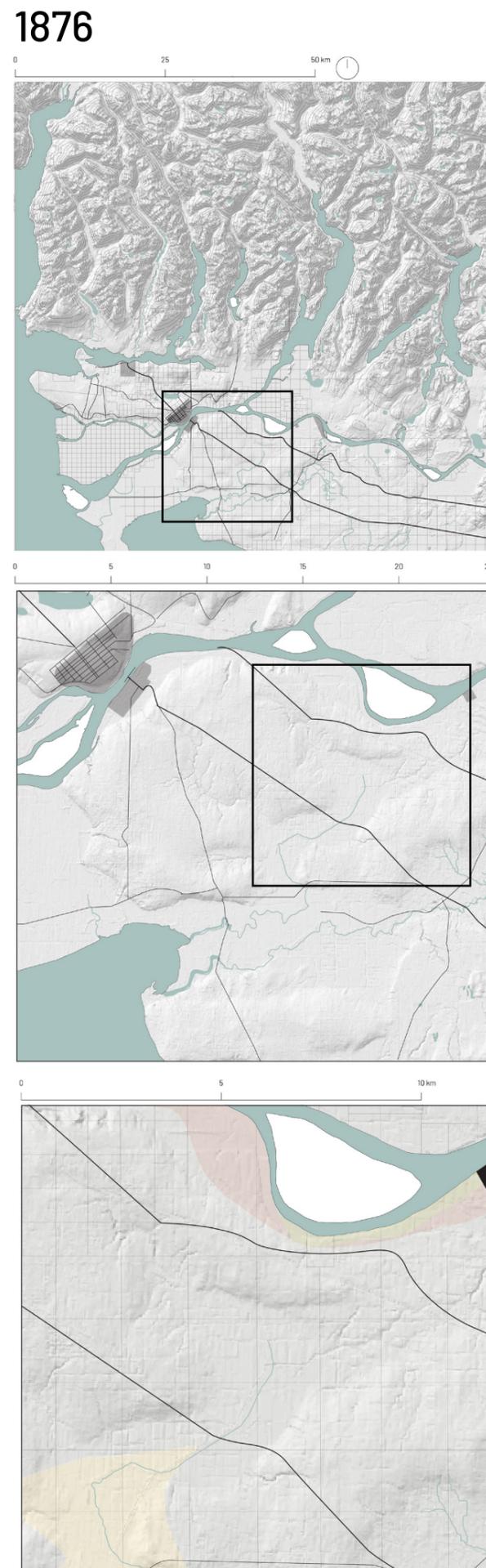
2020

*"A new Fraser Valley innovation corridor anchored by a commuter rail system running from Chilliwack to the city of Vancouver [to] help address many of the region's most pressing issues."*

Regional Scale

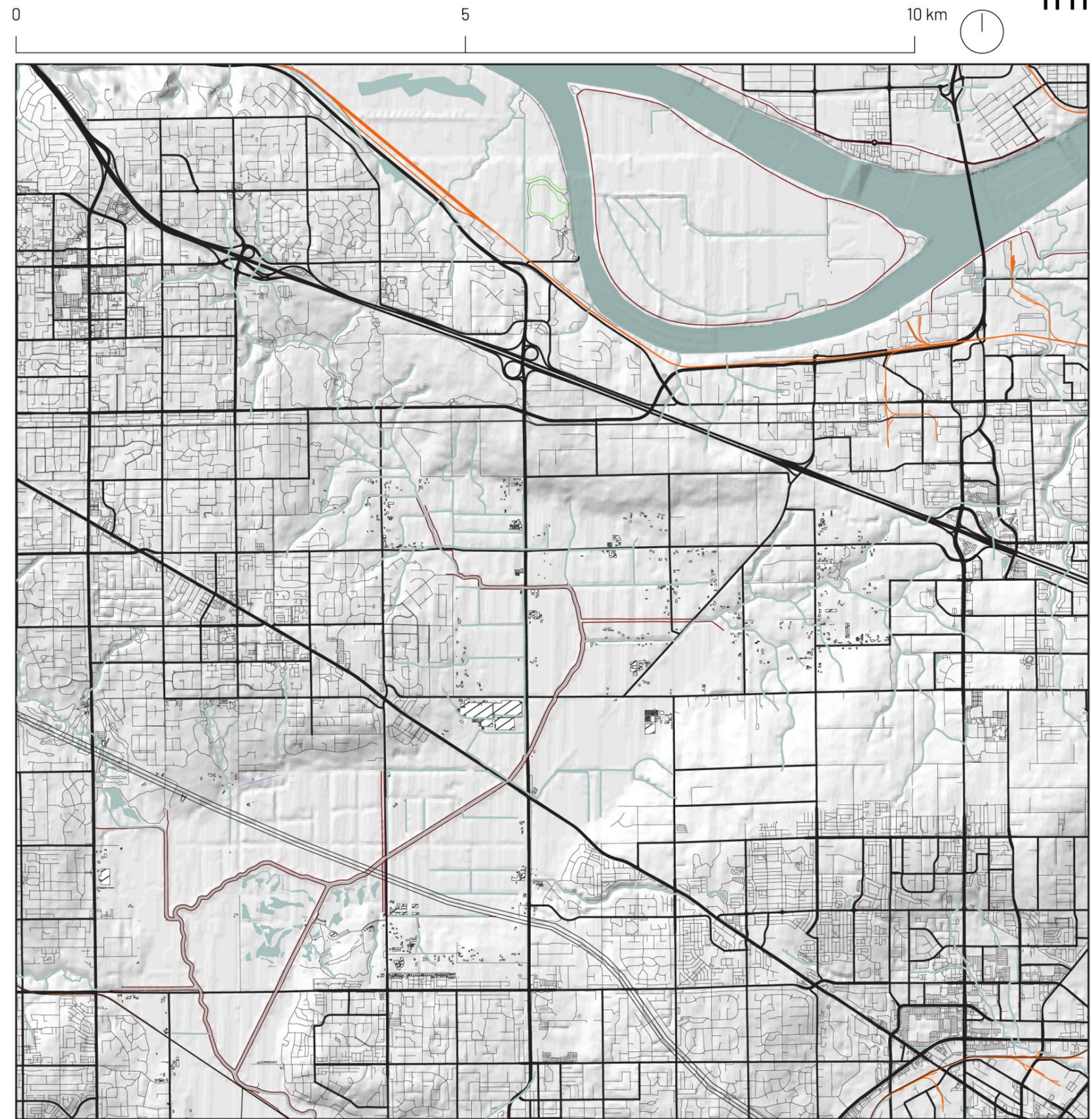
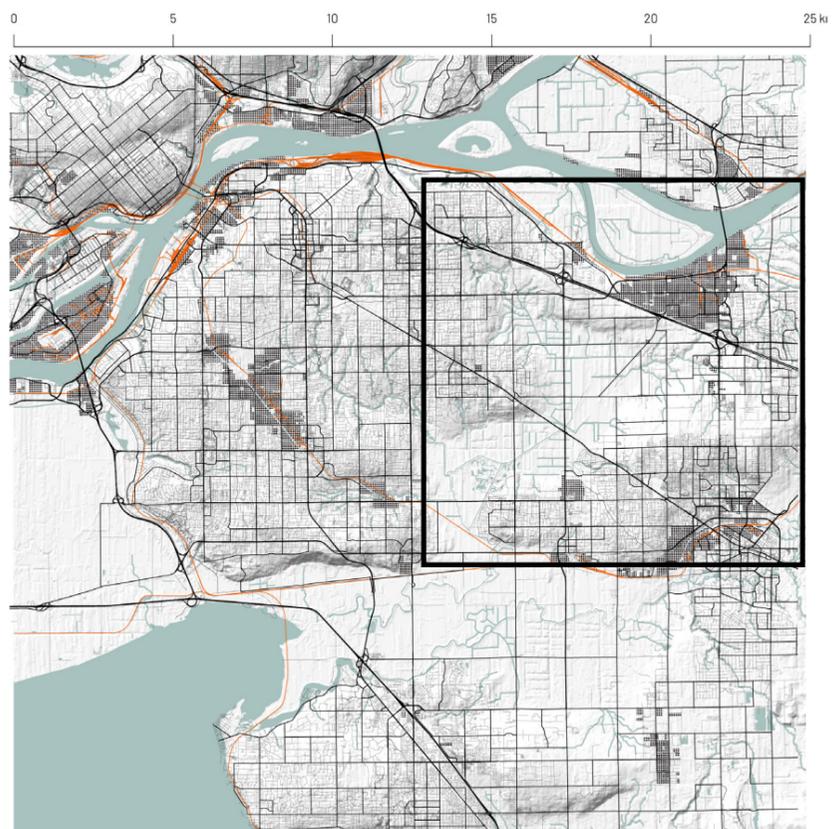
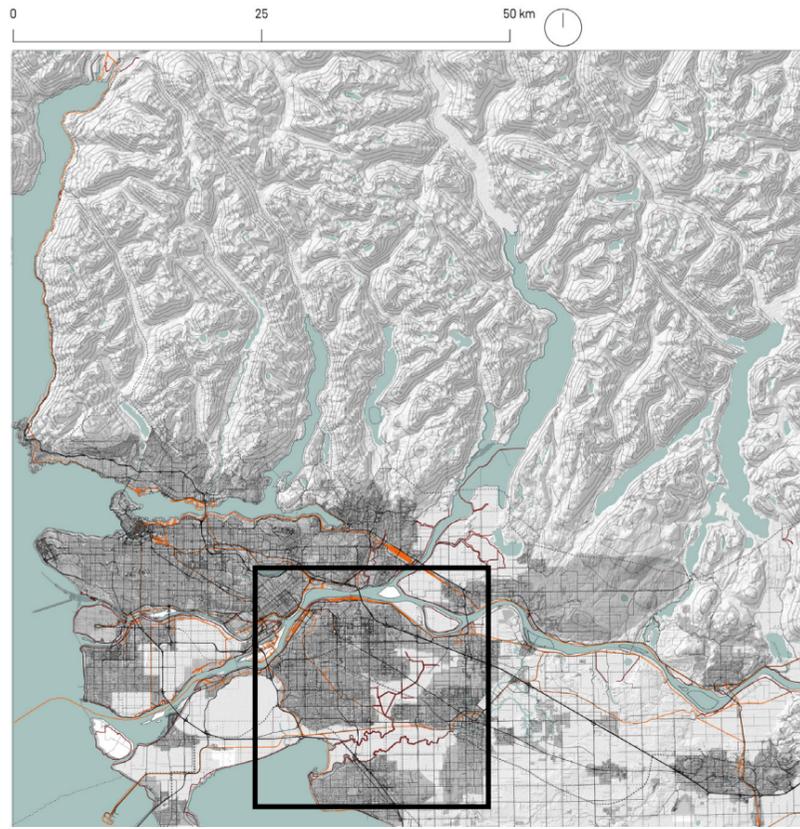
City Scale

Community Scale



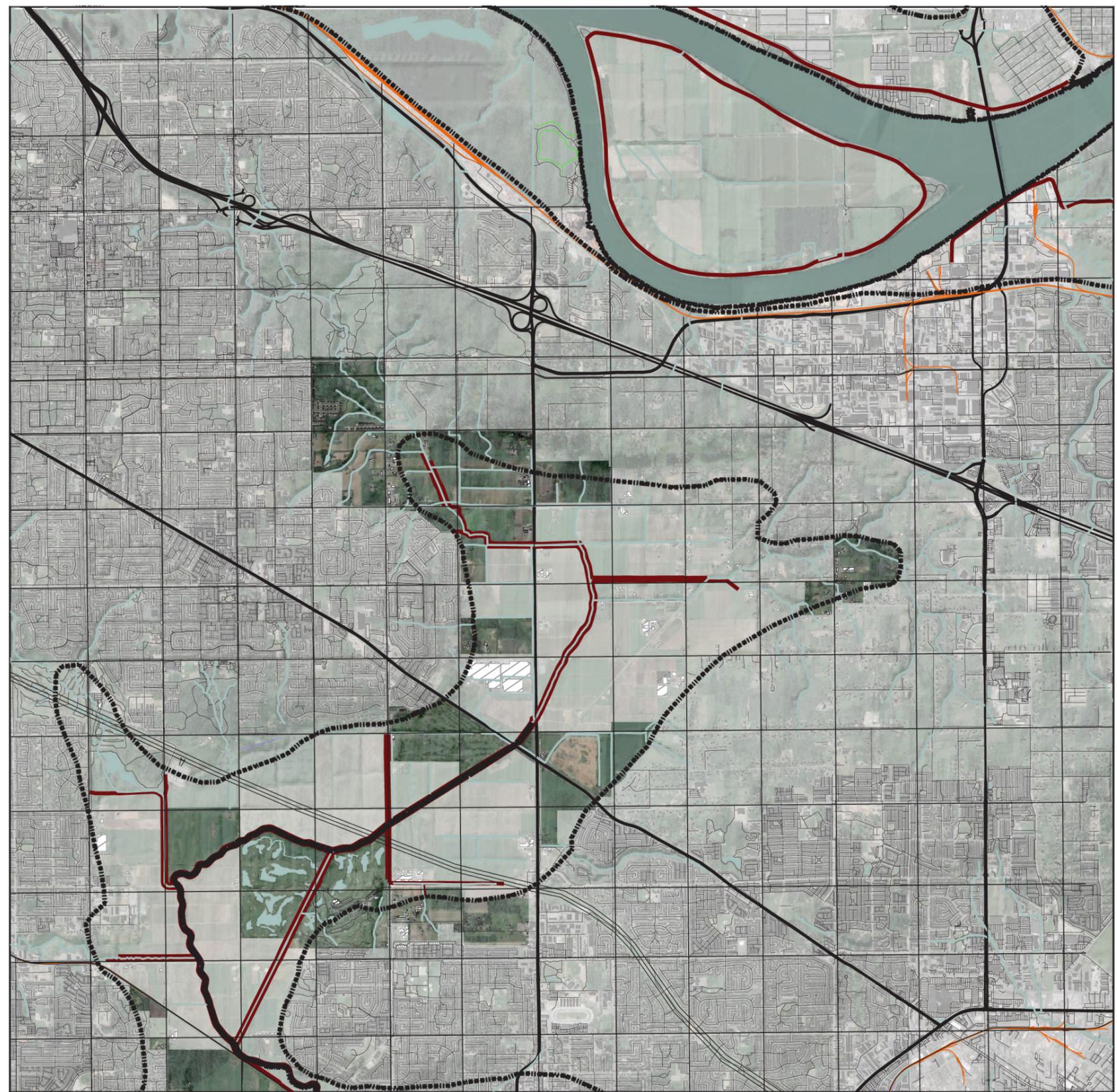
- transmission lines
- - - shipping
- dikes
- rail
- roads

Source: Spatial data from DataBC



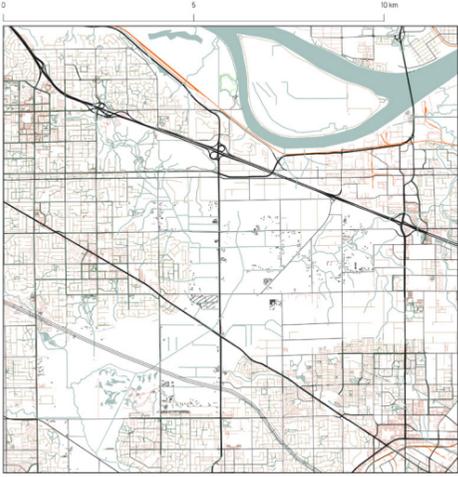
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# Infrastructure Potential for Transformation



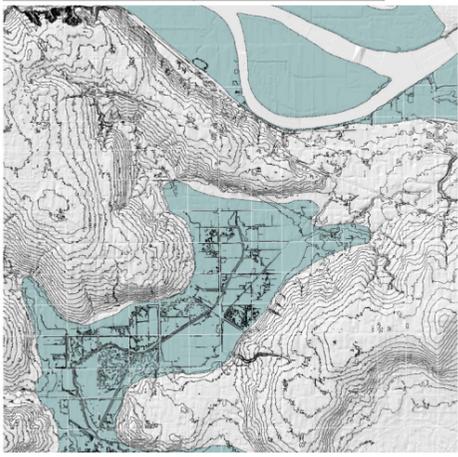
- transmission lines
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Road Types



- Highways
- Primary Roads
- Secondary Roads
- Tertiary Roads
- Service
- Trails

Flood Risk

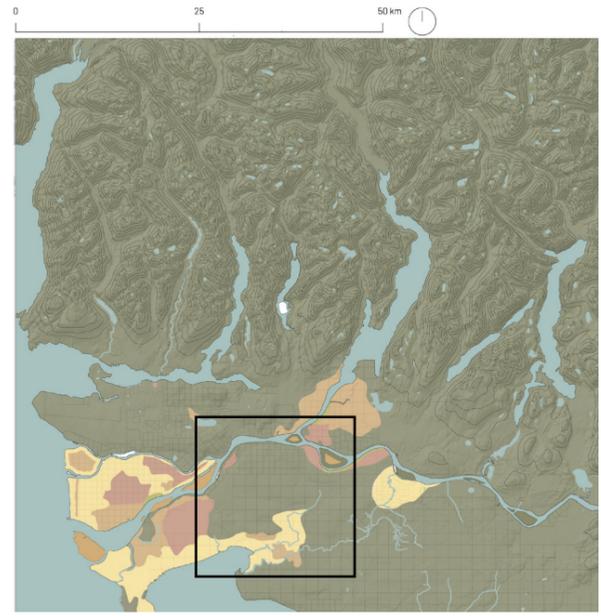


- Flood Zone

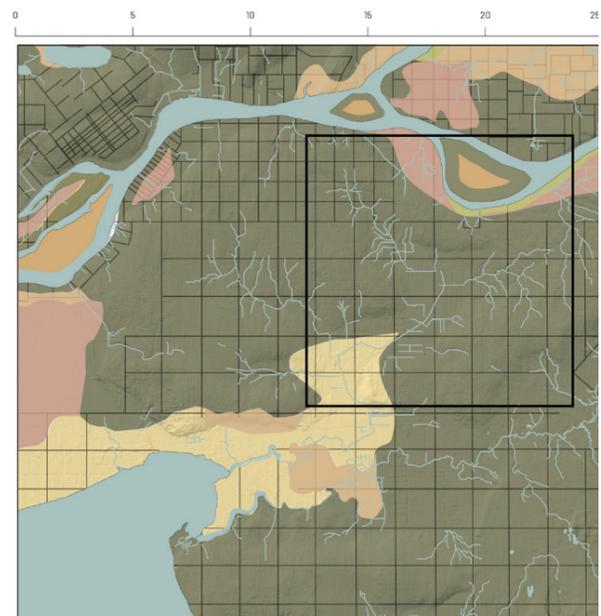
Topography



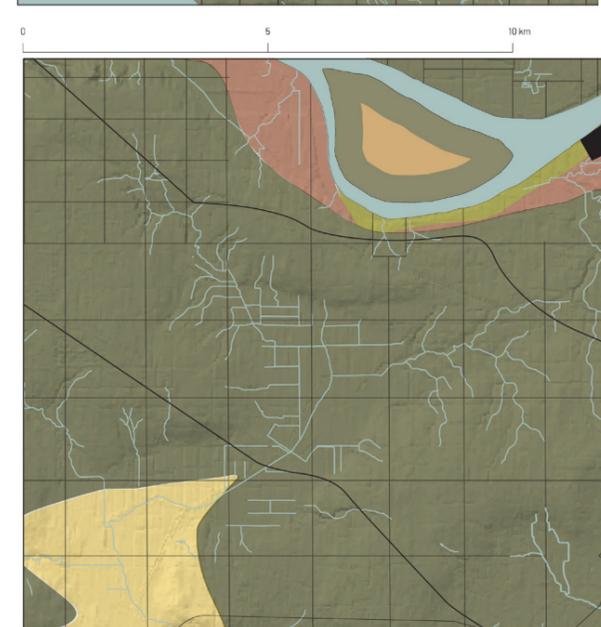
1876



Regional Scale



City Scale



Community Scale

- grasslands
- grass & shrubs
- deciduous forest
- coniferous forest
- bog

Source: Spatial data from DataBC

# Nature



**Township of New Westminster surveyed by Britton, Reye & Company using both the Block and Range Survey and Jefferson Grid**

1876

*Intended to aid settlers in selecting land,*



**Stanley Park Designated**

1888

*Unlike other large urban parks, Stanley Park is not the creation of a landscape architect, but rather the evolution of a forest and urban space over many years*



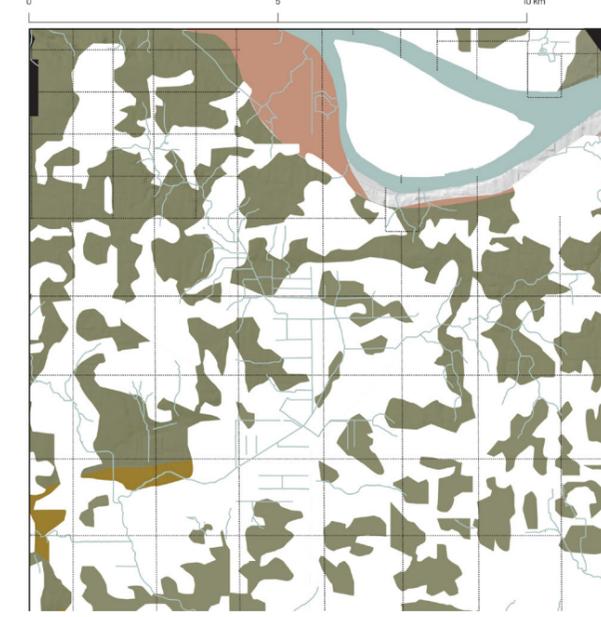
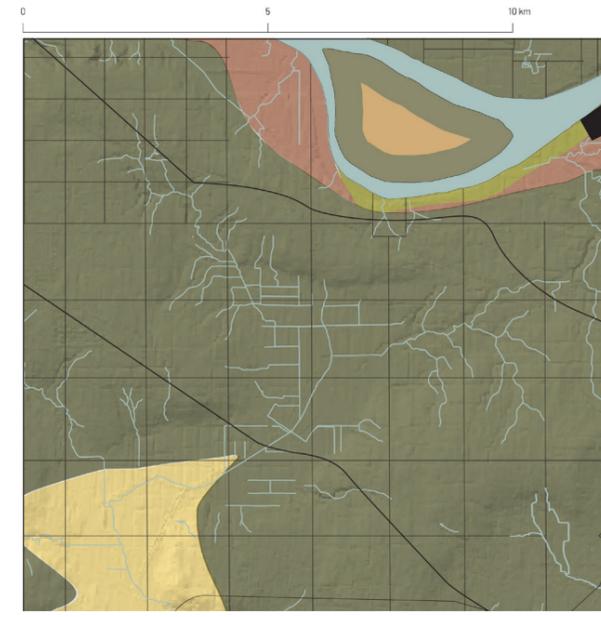
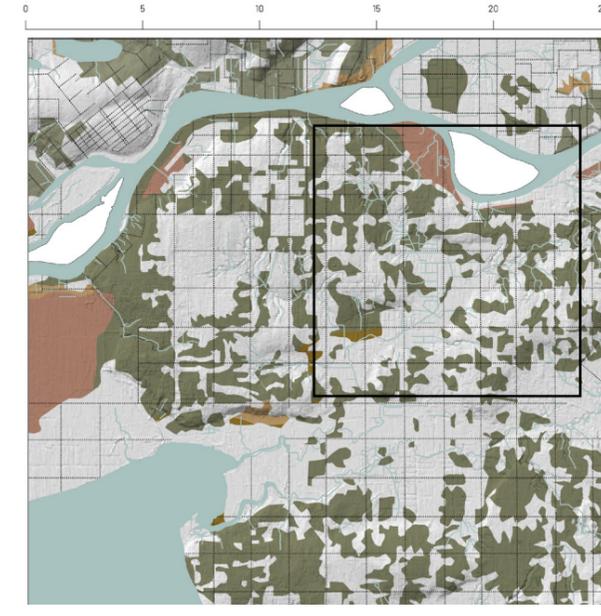
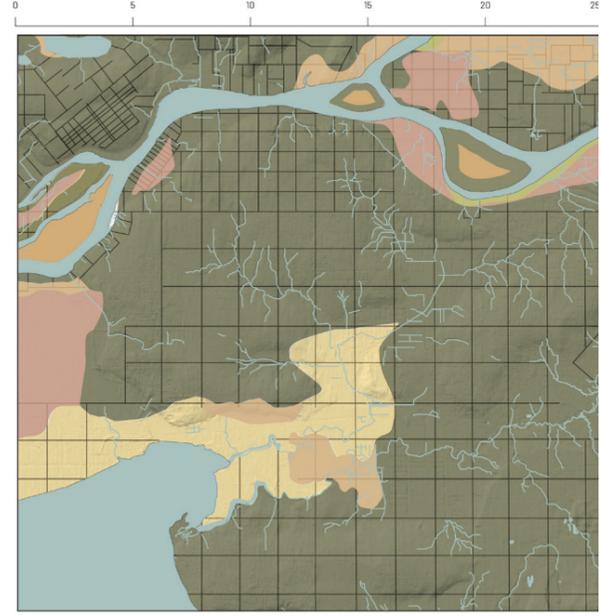
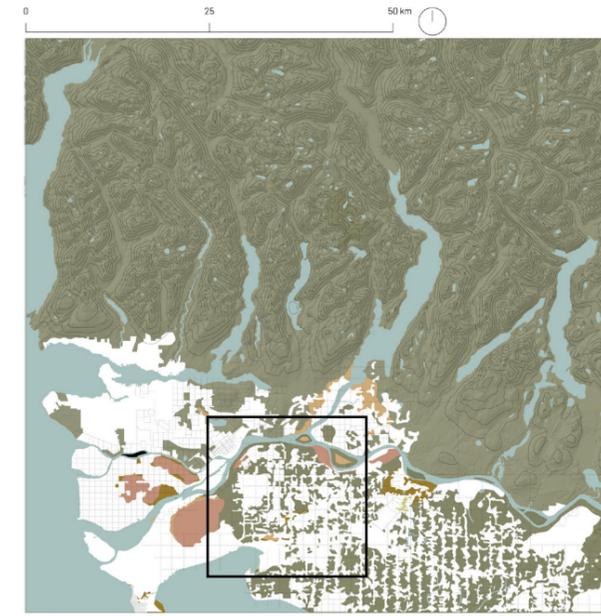
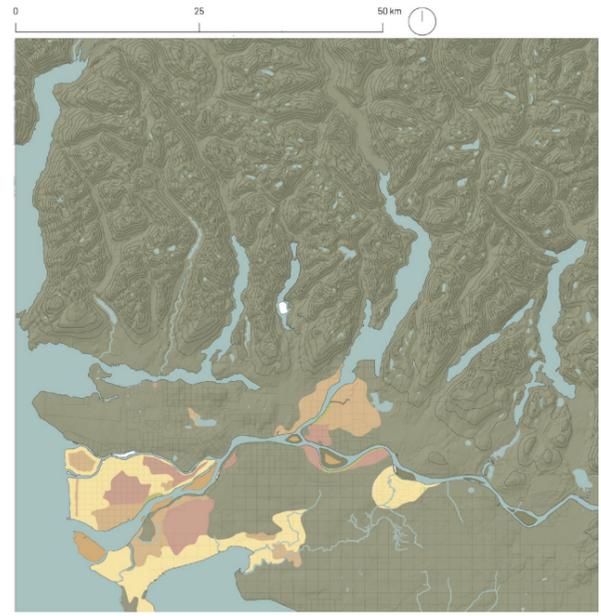
1876

1949

Regional Scale

City Scale

Community Scale



- grasslands
- grass & shrubs
- deciduous forest
- coniferous forest
- bog

Source: Spatial data from DataBC

# Nature



Green Timbers Forest in Surrey is the 'last piece of virgin forest from San Diego to Vancouver'

1875-1930



Felling of 5000 acres of trees in Surrey's centre + Reforestation of the site begins

1930

1876

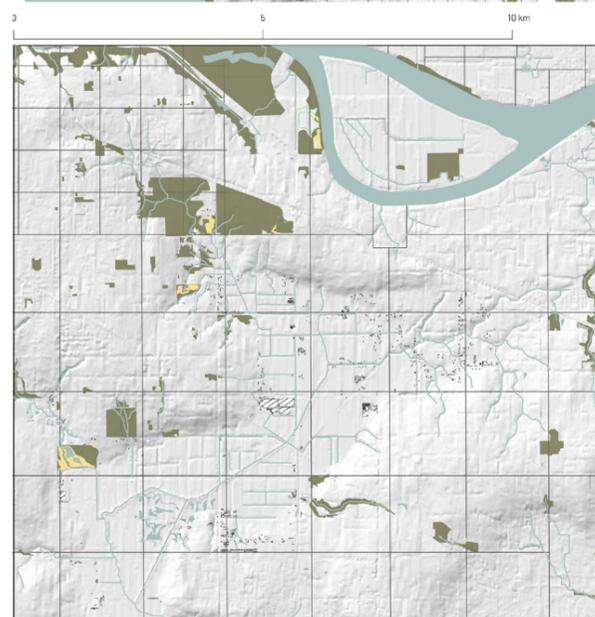
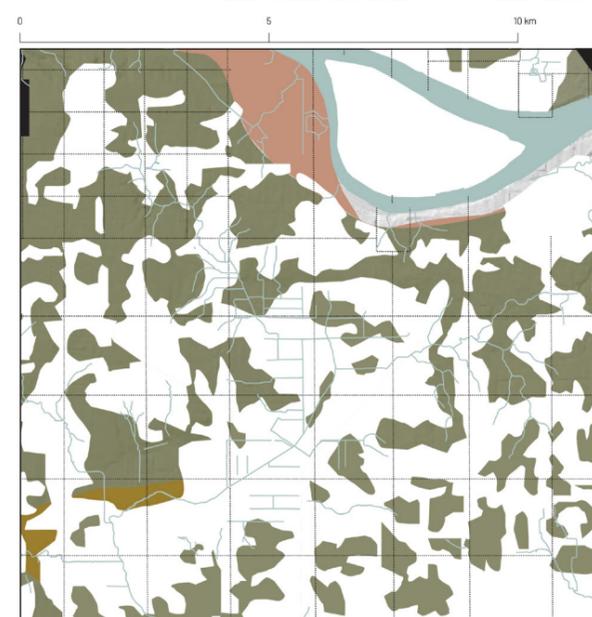
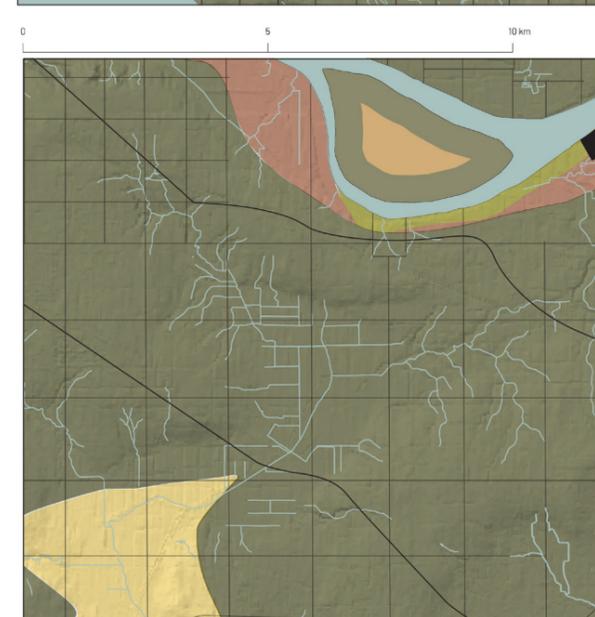
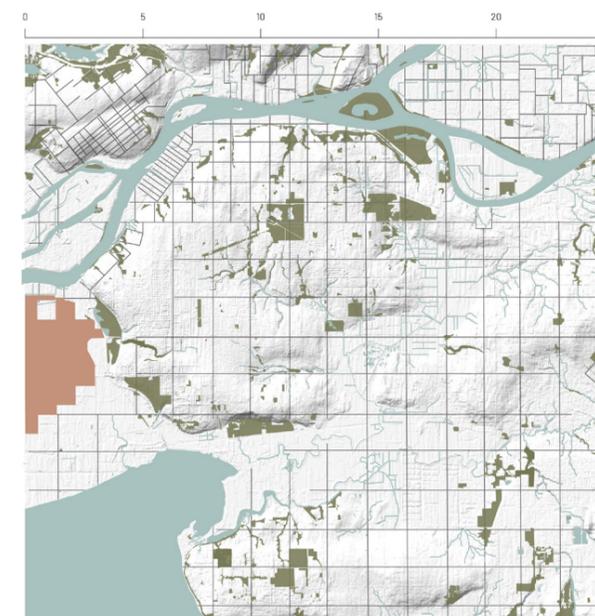
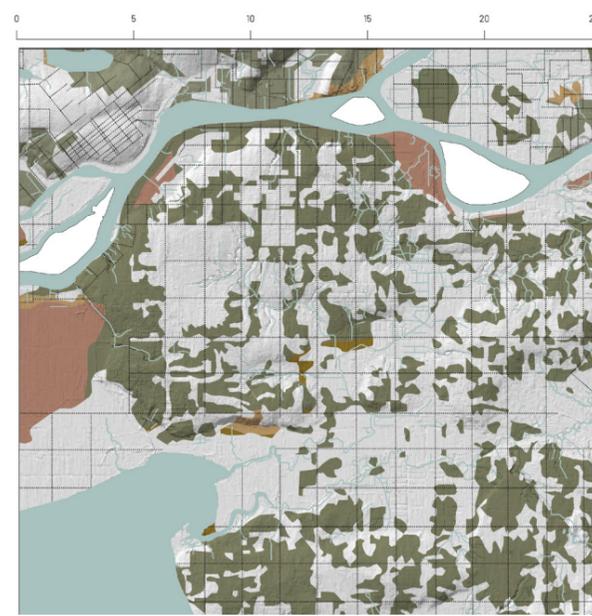
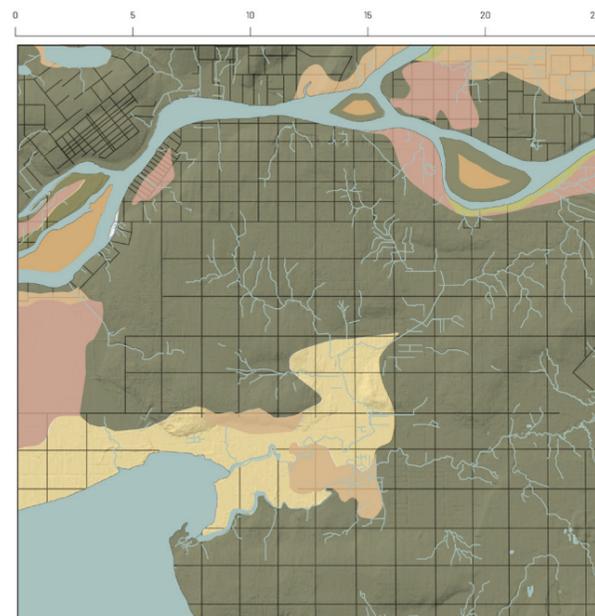
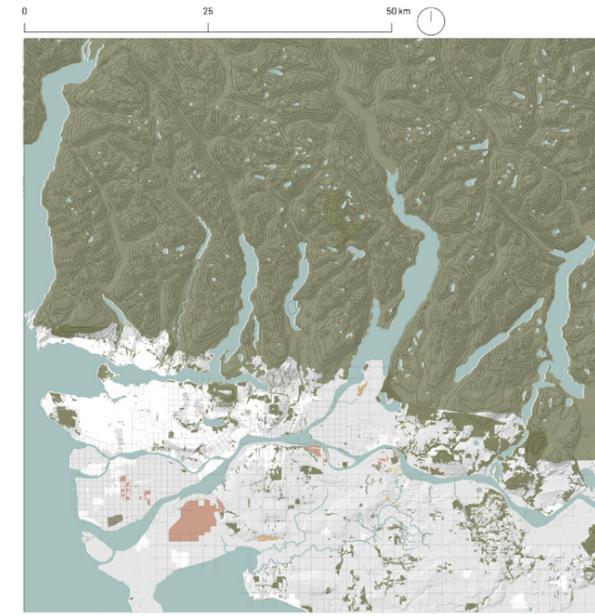
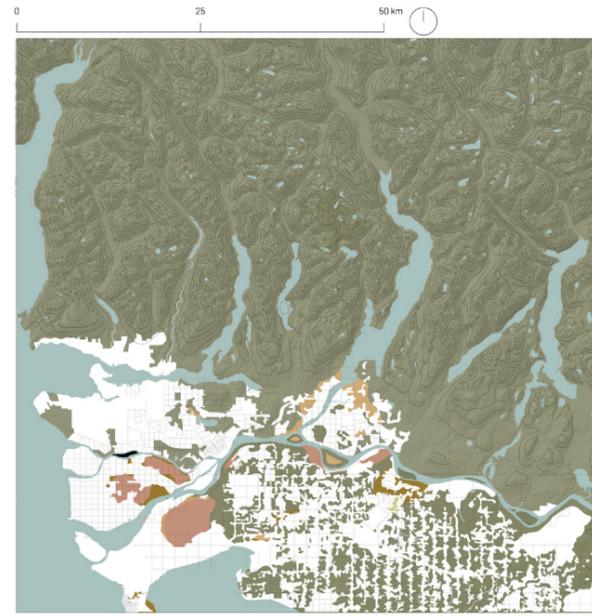
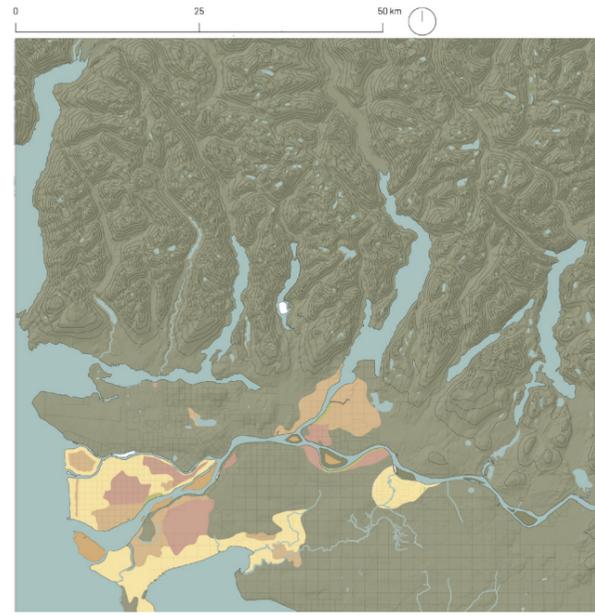
1949

2020

Regional Scale

City Scale

Community Scale



- grasslands
- grass & shrubs
- deciduous forest
- coniferous forest
- bog

Source: Spatial data from DataBC

# Nature

A Regional Parks Plan for the Lower Mainland Region is created to meet the outdoor recreation needs of Lower Mainland residents

1966

Regional Parks become part of the Greater Vancouver Regional District. "Parks are the region's breathing spaces."

1972

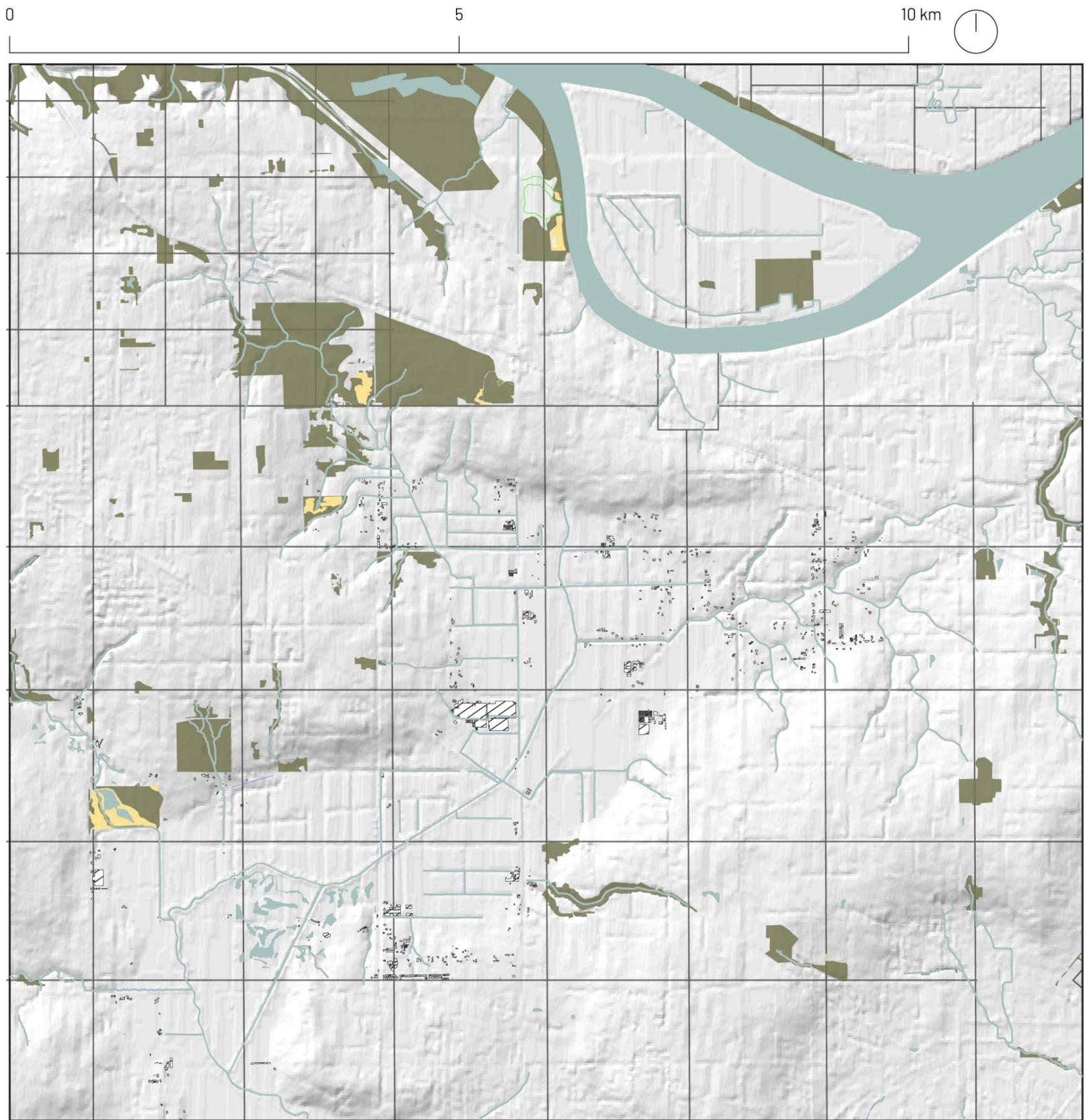
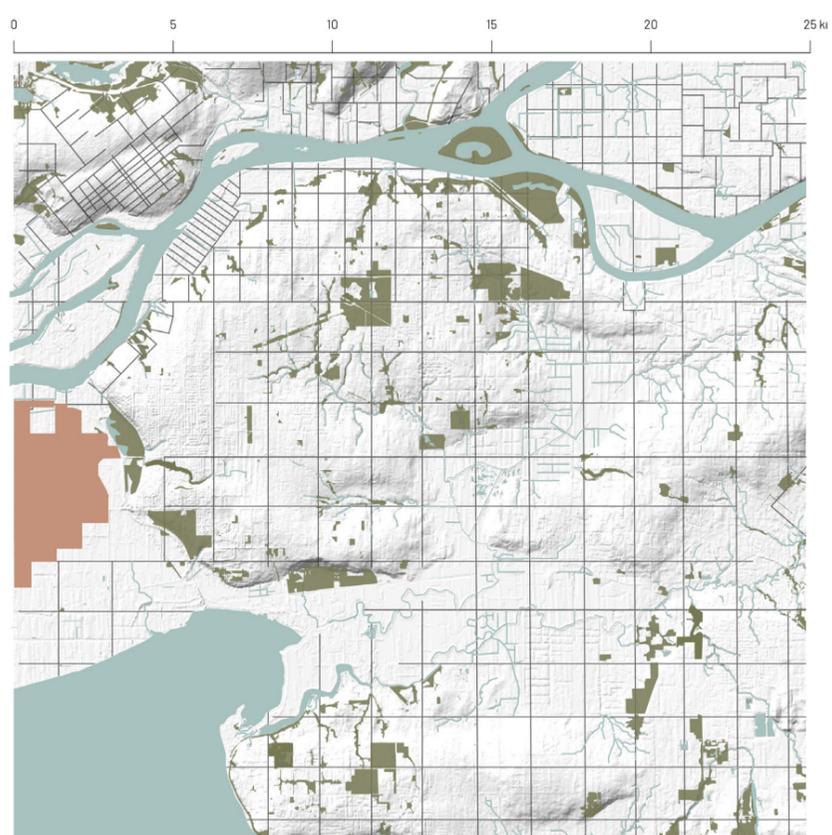
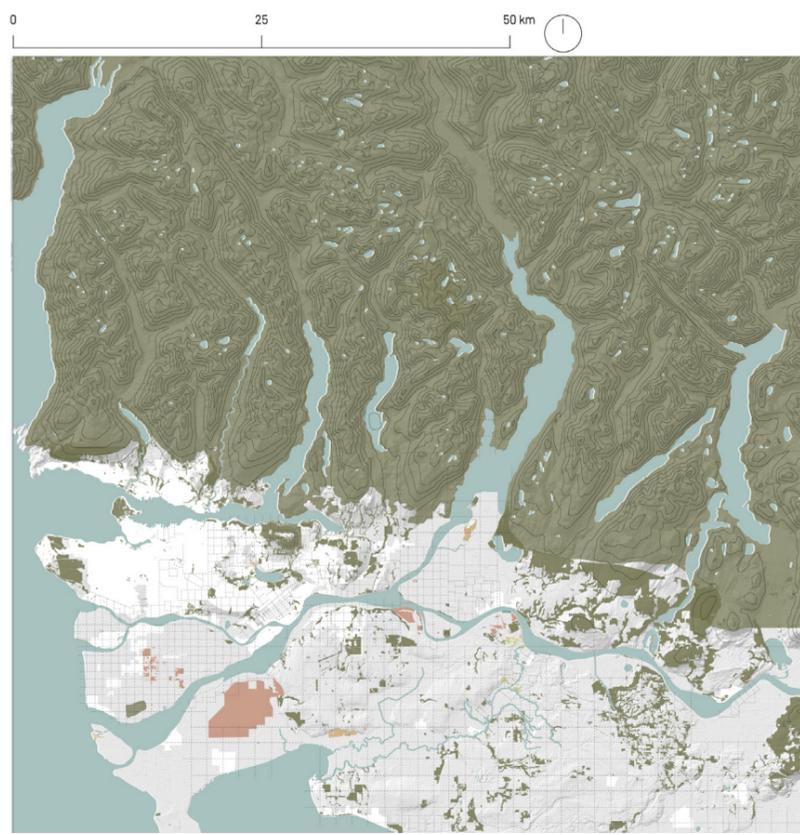


Green Timbers Park is Designated and Protected

1981-1989

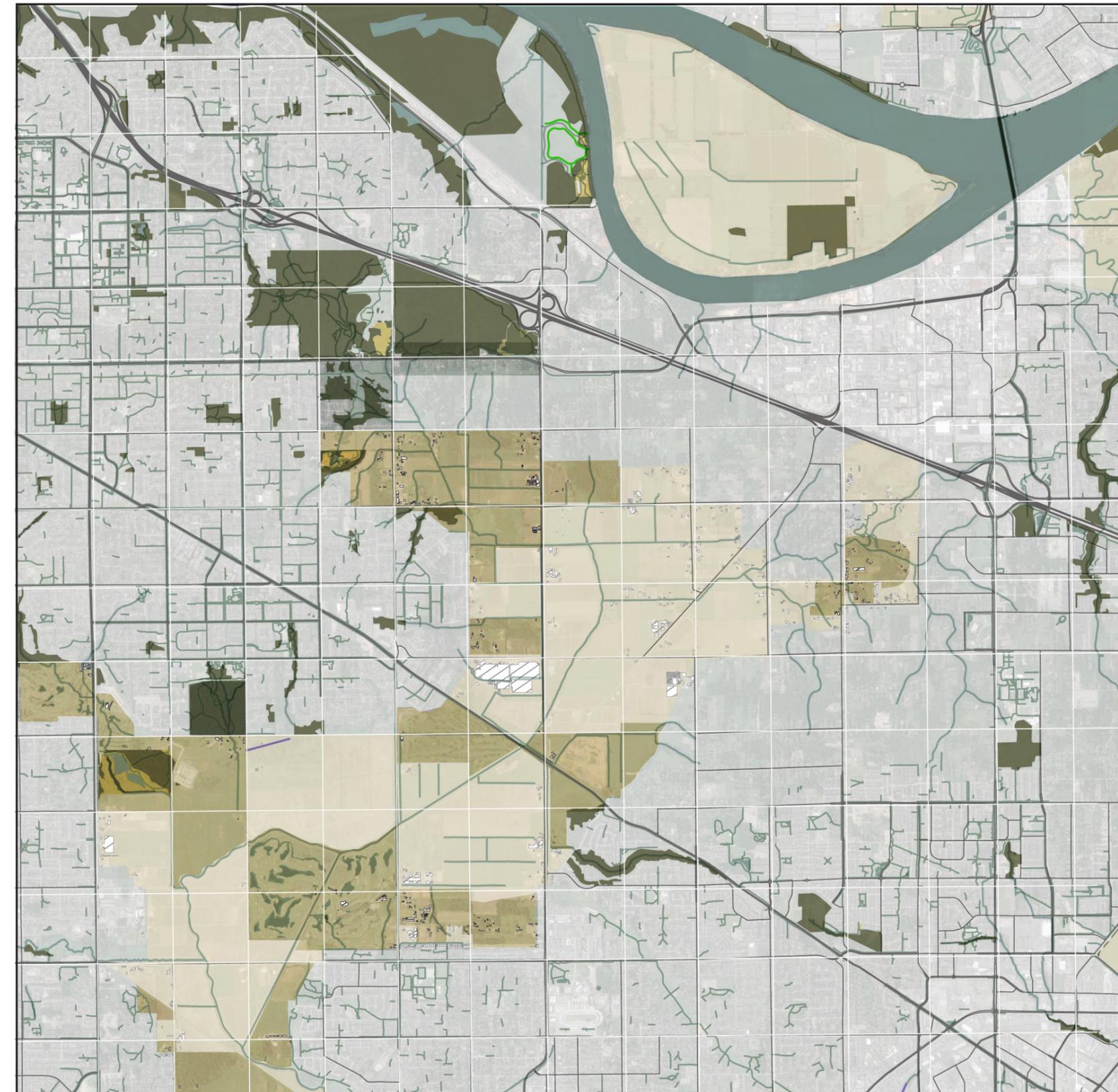
As development in the region increases and greenspace decreases, there is an emphasis on conservation and sustainability.

2005



grasslands  
coniferous forest

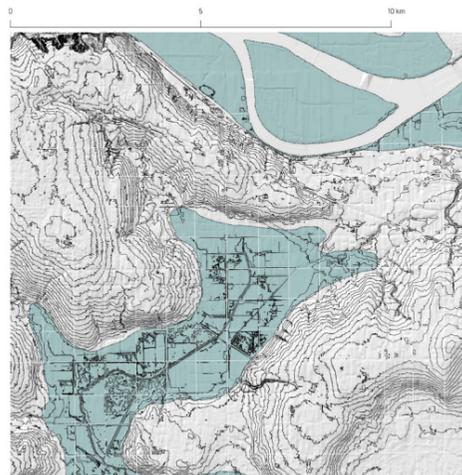
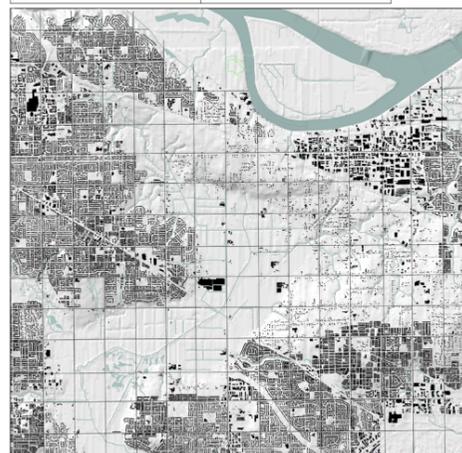
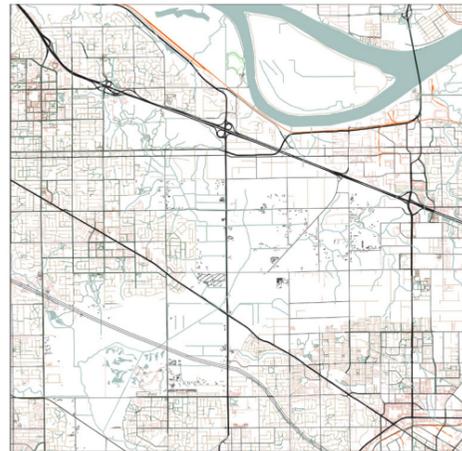
# Nature Potential for Transformation



- Highways
- Primary Roads
- Secondary Roads
- Tertiary Roads
- Service
- Trails
- grasslands
- grass & shrubs
- deciduous forest
- coniferous forest
- bog

- Highways
- Primary Roads
- Secondary Roads
- Tertiary Roads
- Service
- Trails

Flood Zone



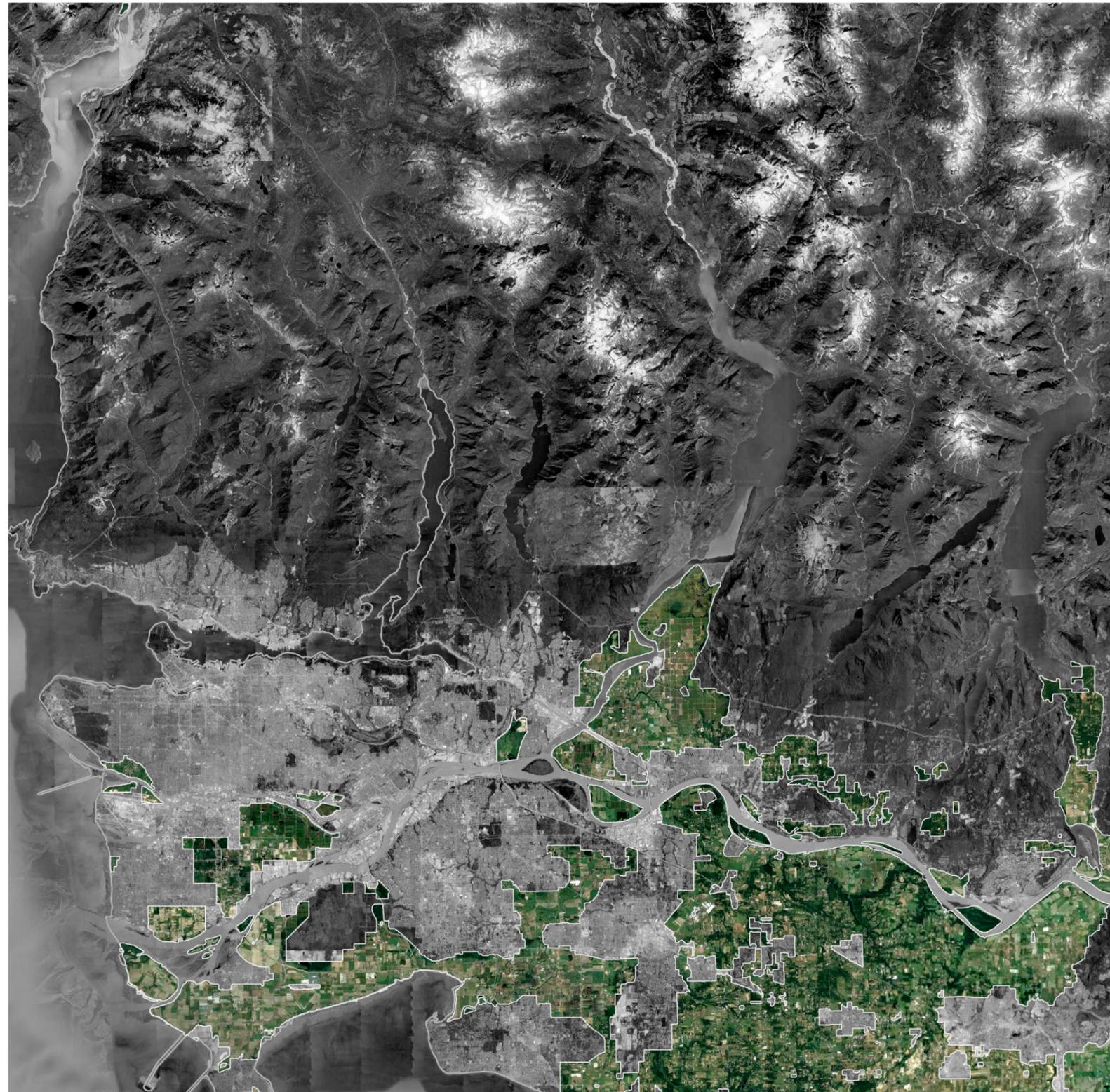
Road Types

Built Form

Flood Risk

What is supported by this territorial structure?

# An Urban-Agricultural Territory



## Berries, Tree Fruit and Field Vegetables



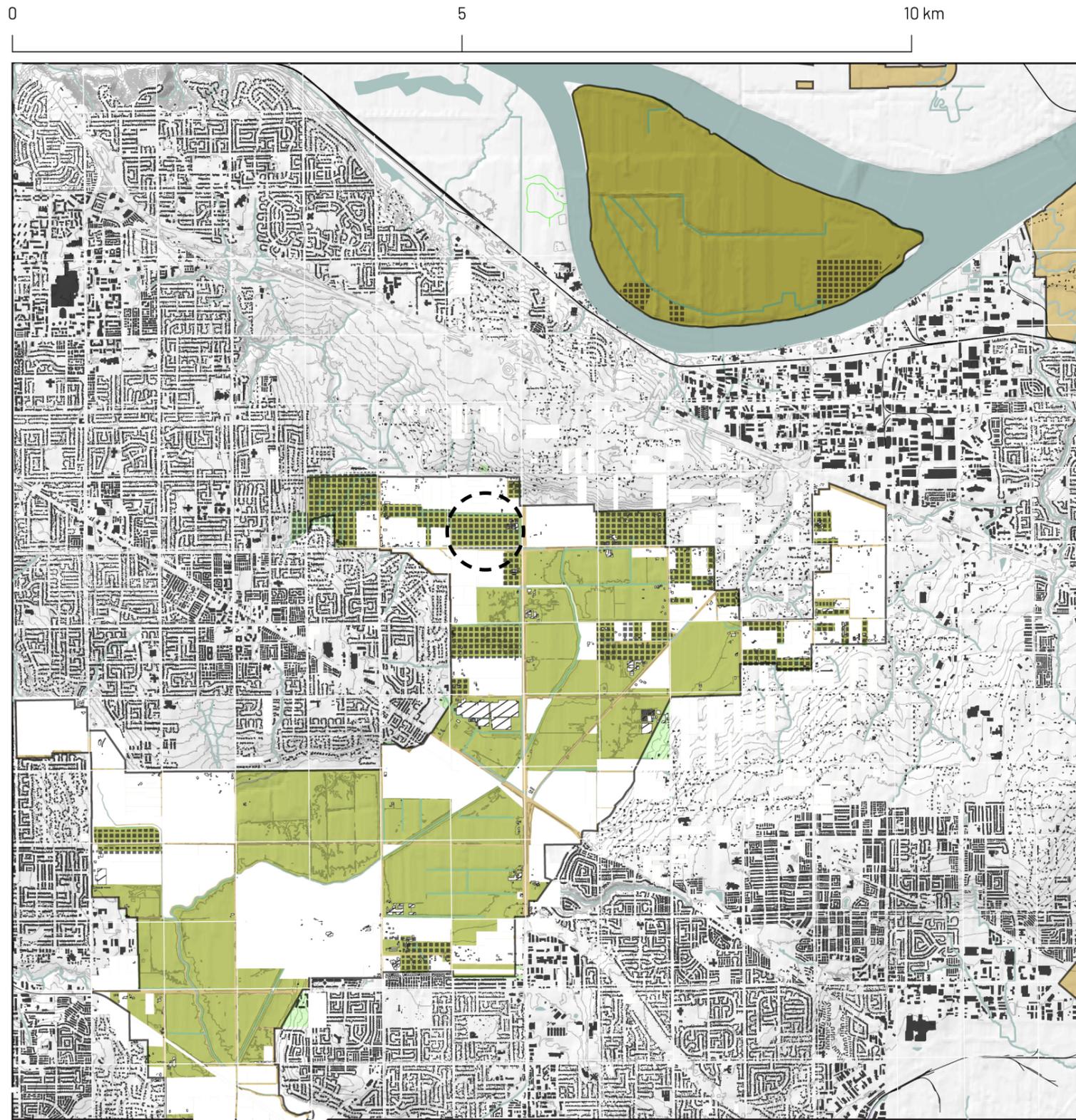
## Floriculture, Nursery Plants & Greenhouse Products



## Oil Crops and Livestock Grazing



# Berries, Tree Fruit and Field Vegetables

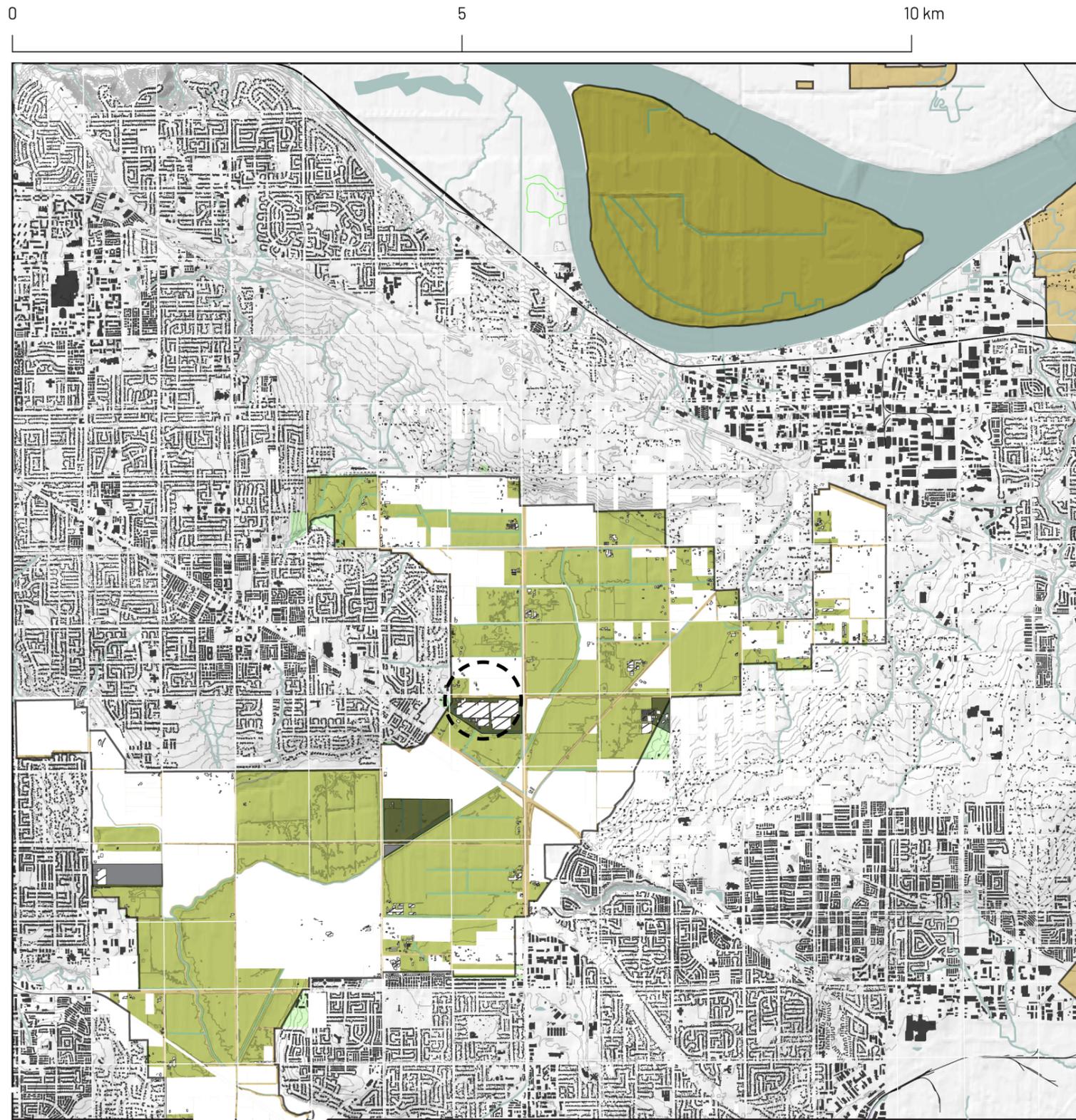


Heaven Fresh Choice Farm



 Small-scale

# Floriculture, Nursery Plants & Greenhouse Products



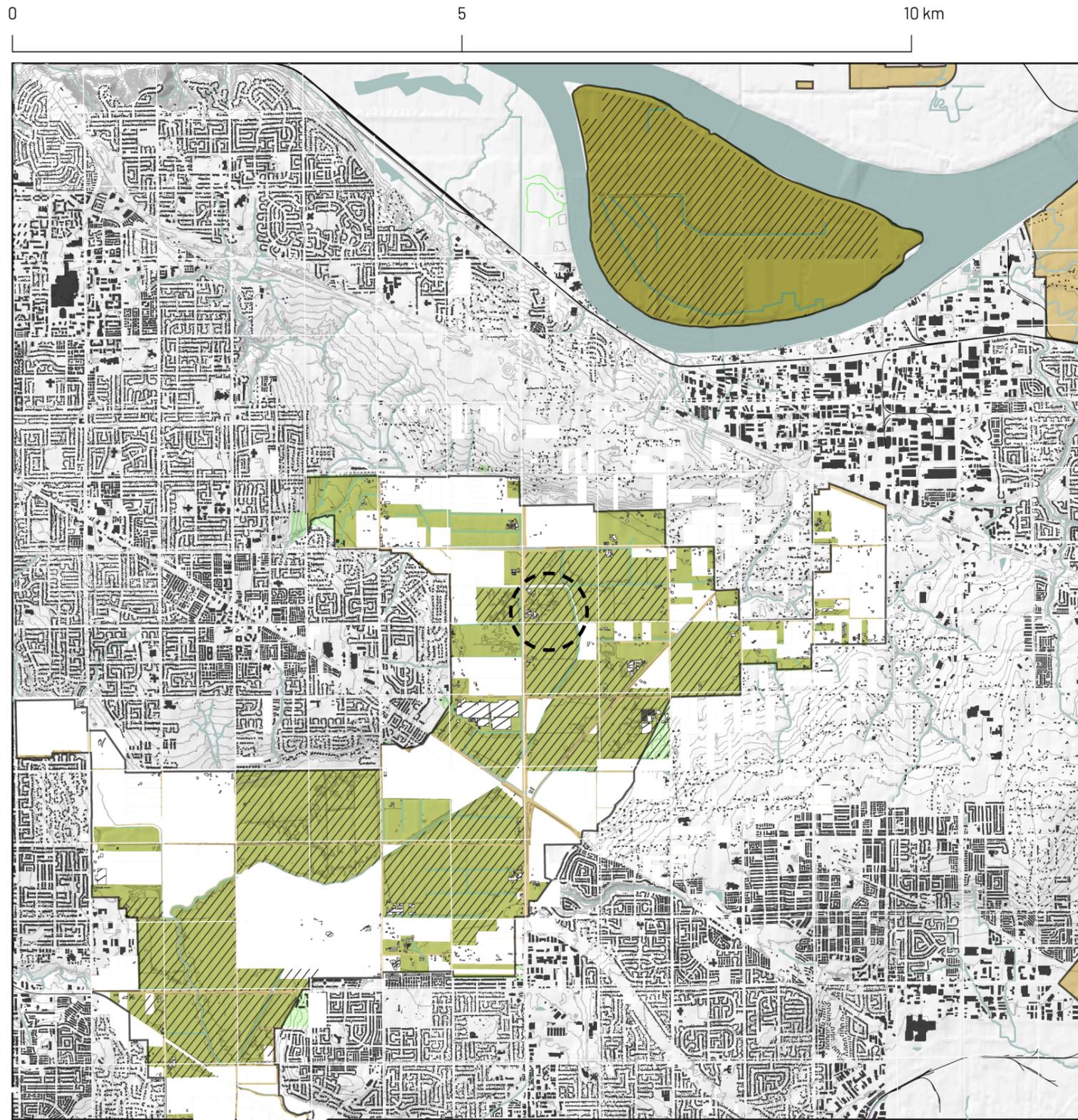
Burnaby Lake Greenhouses



Greenhouse/Nursery

Source: 2017 Surrey Land-use Survey and spatial data from DataBC

# Oil Crops and Livestock Grazing



Burnaby Lake Greenhouses



 Large-scale

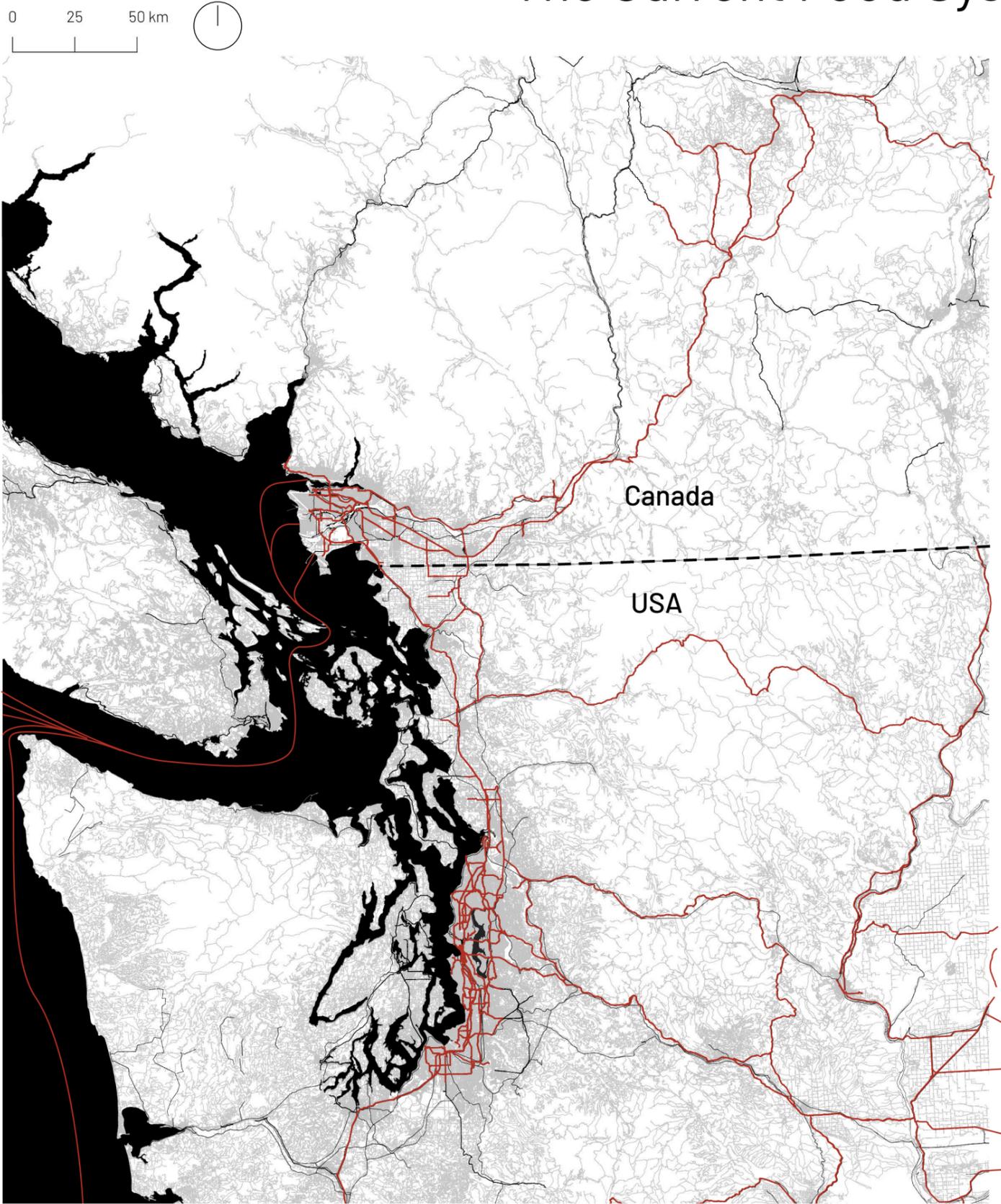
What is imported and what is exported?

# The Current Food System

## Export-Driven Production

\$3.9 billion to 157 markets worldwide

-  **United States** 71.7%
-  **China** 10.1%
-  **Japan** 5.2%
-  **South Korea** 1.8%
-  **Hong Kong** 1.7%



## Import-Driven Consumption

\$8.8 billion of food products from the rest of the world, including over

\$2 billion of fruits and vegetables from California on an annual basis

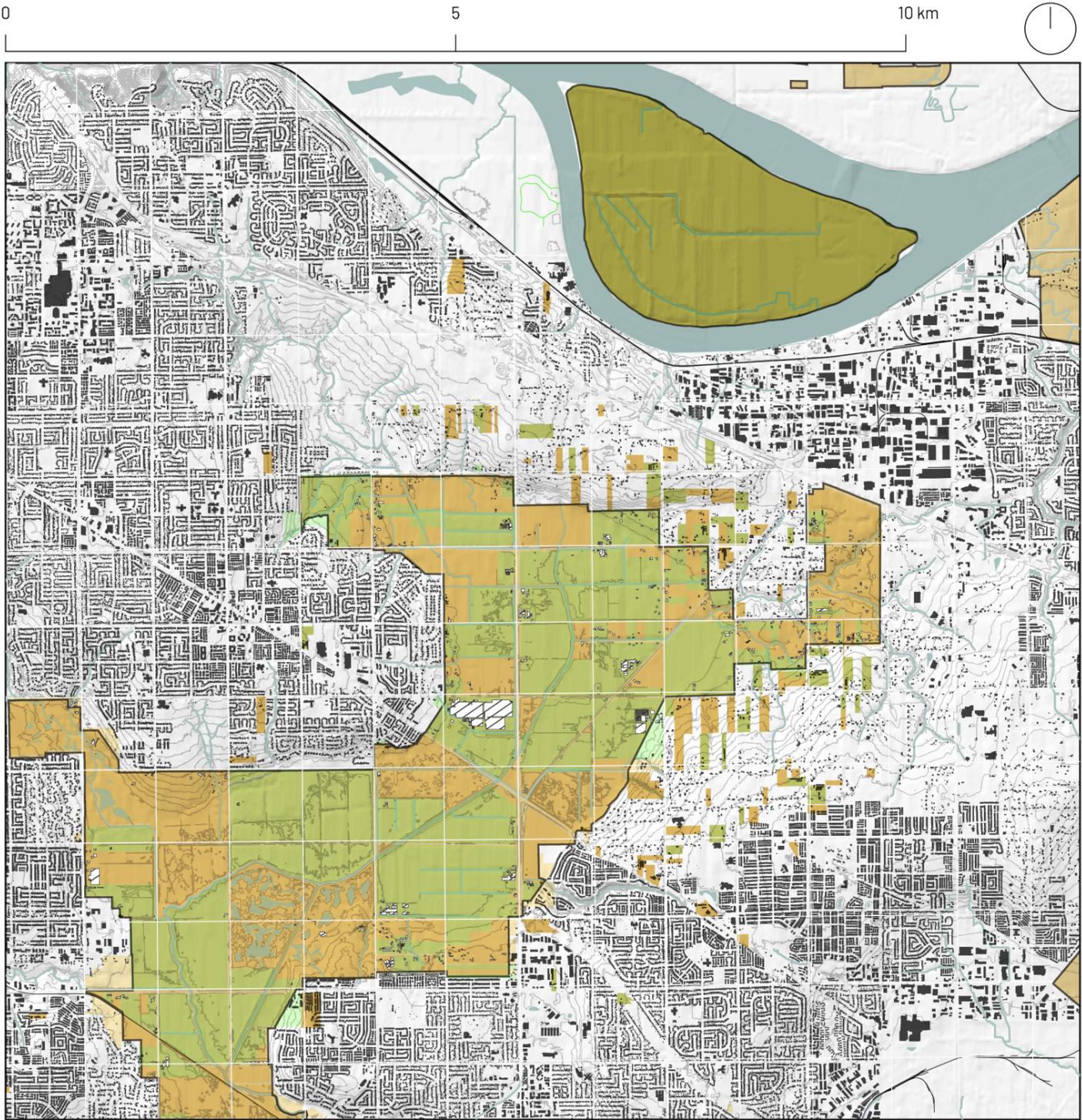


Year	Proportion imported
1946	3%
1955	29%
1970s	60%
1990s	40%
2008	45%

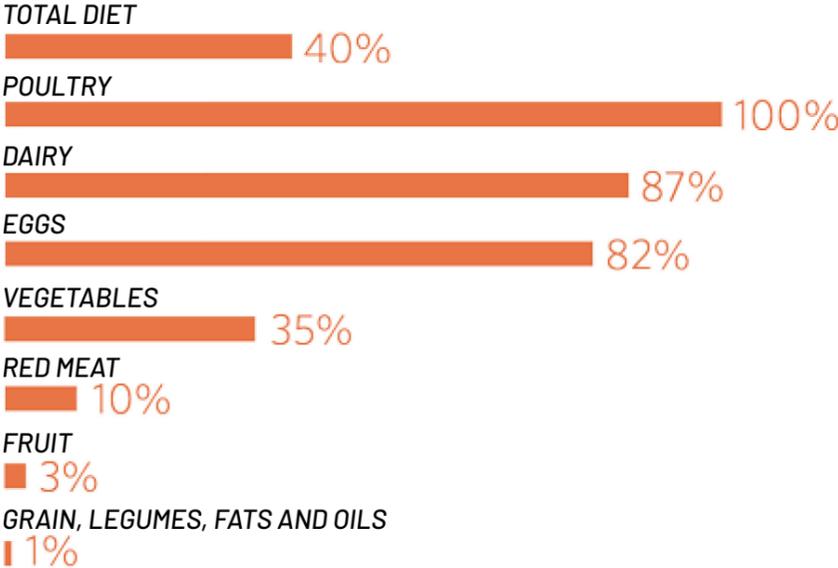
(Furuseth and Pierce, 1982; Statistics Canada, 2008)

How self-reliant is the Lower Mainland?

# Current Self-Reliance



## Regional Self-Reliance



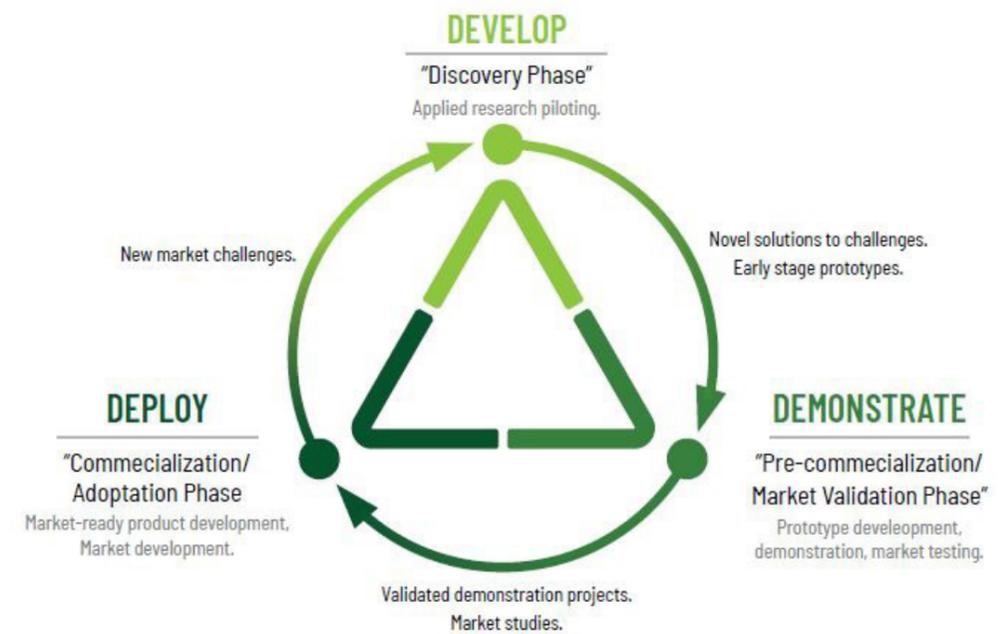
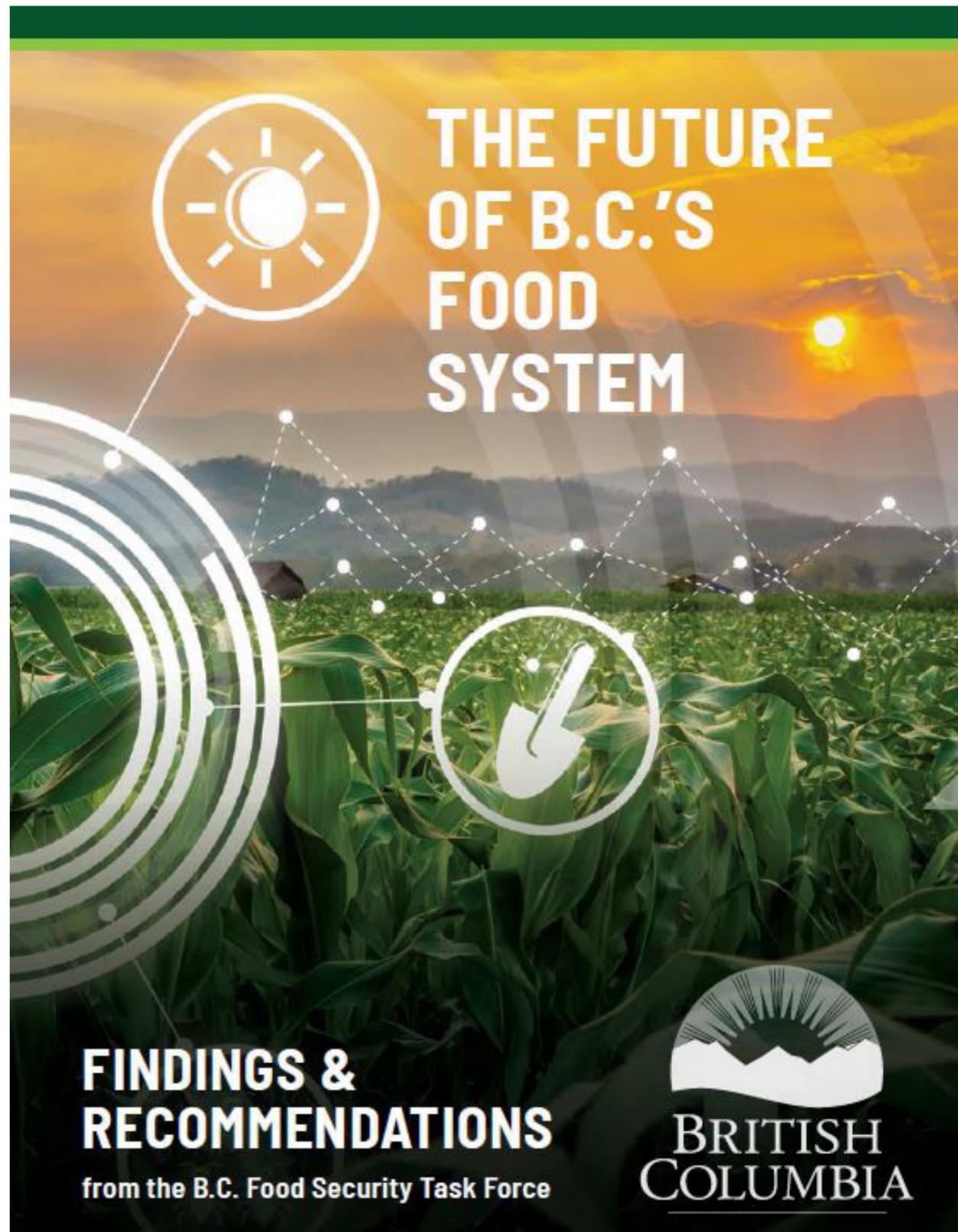
**Arable Land:**  
 165,000 hectares of arable land in the region.  
 101,000 hectares currently in production **61%**

## Local Self-Reliance

**Arable Land:**  
 3200 hectares of arable land  
 2200 hectares currently in production **68%**

Not used for Farming  
 Active Farm

How does British Columbia view the future of  
agriculture in the Lower Mainland?

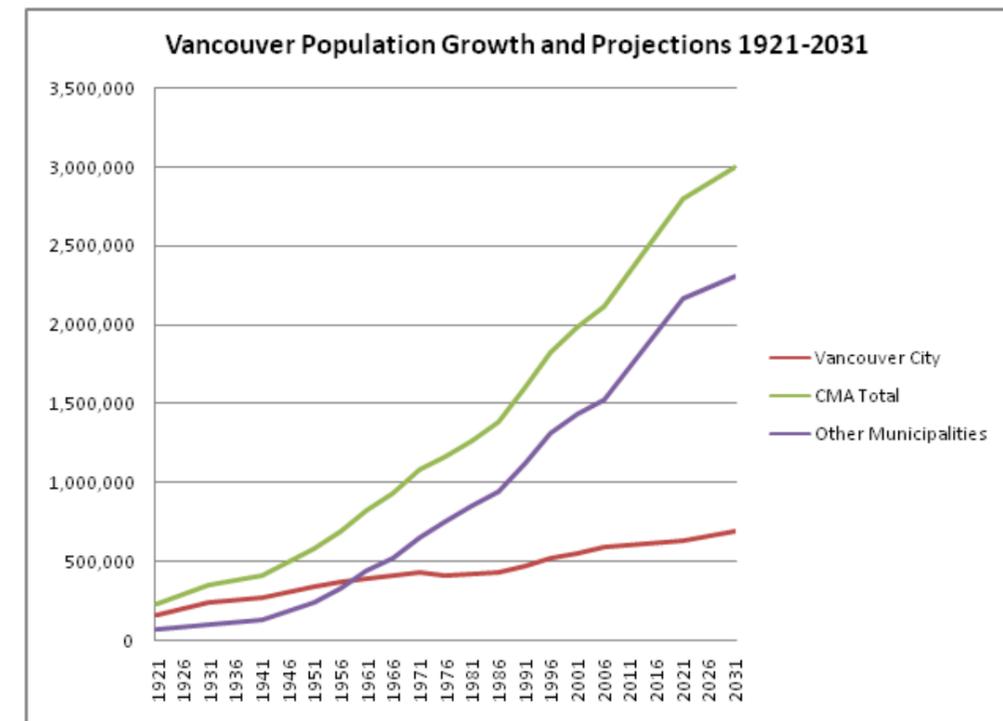


## Main Goals

- Indoor Growing
- Vertical Growing
- Sensor Technology
- Robotics
- Processing Technologies
- Agricultural Genomics
- Waste Reduction Technology

What is the future of urban development in the region?

# Development Trends

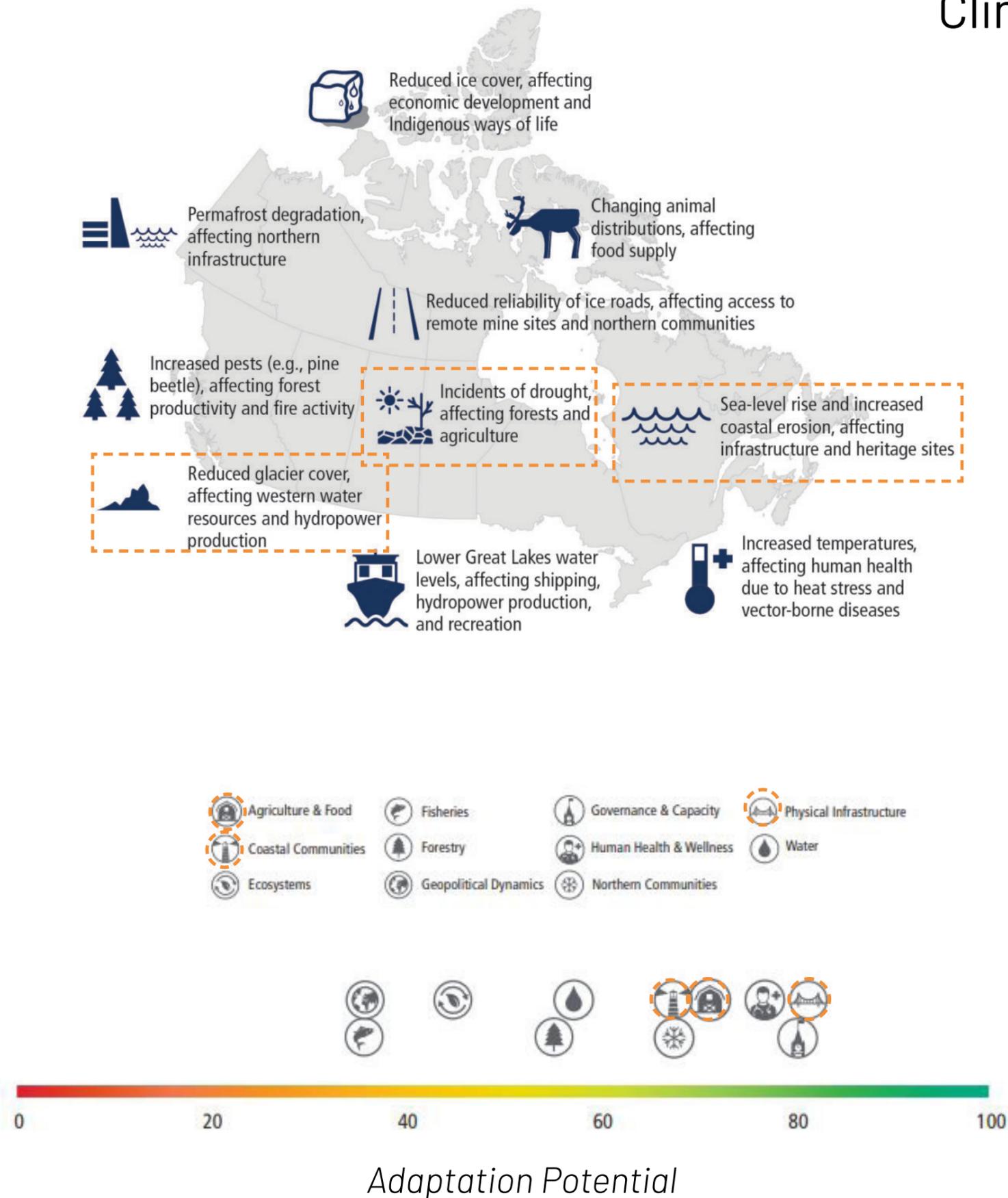


Proposed density increase in downtown Surrey. Retrieved from: <https://dailyhive.com/vancouver/surrey-future-development-vancouver-oakland-san-francisco-bob-williams>

Historic and projected population growth in Vancouver and the Vancouver census metropolitan area (CMA) Retrieved from: <https://ibis.geog.ubc.ca/courses/geob479/classof08/vandensify/introduction.html>

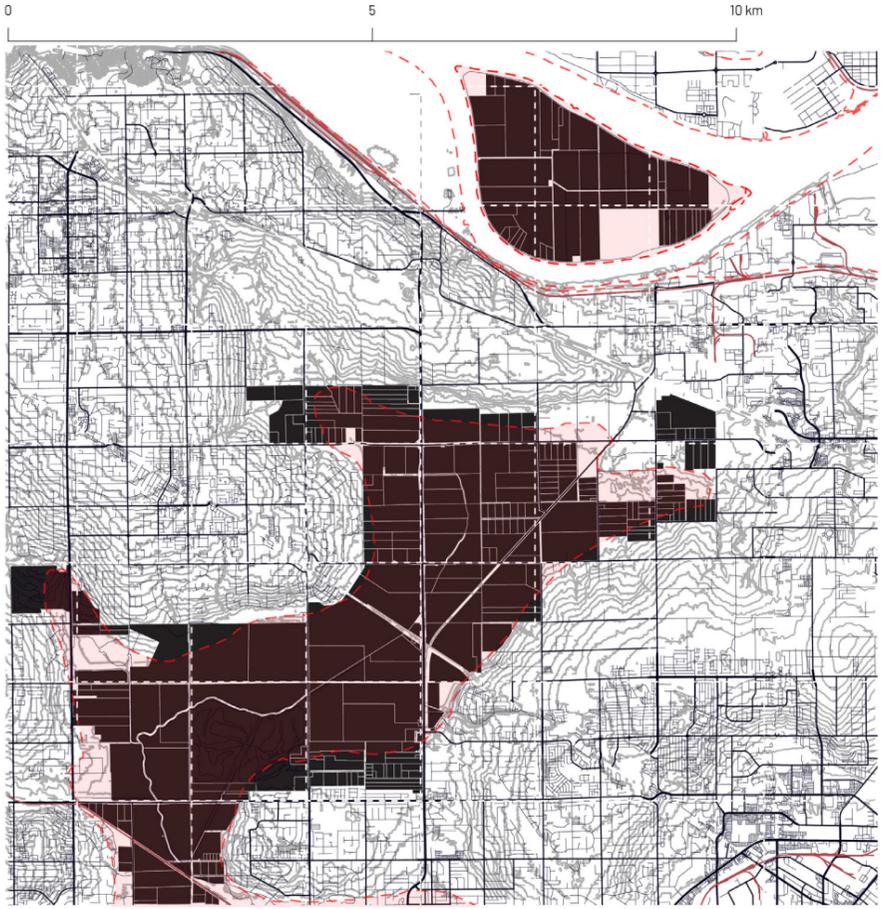
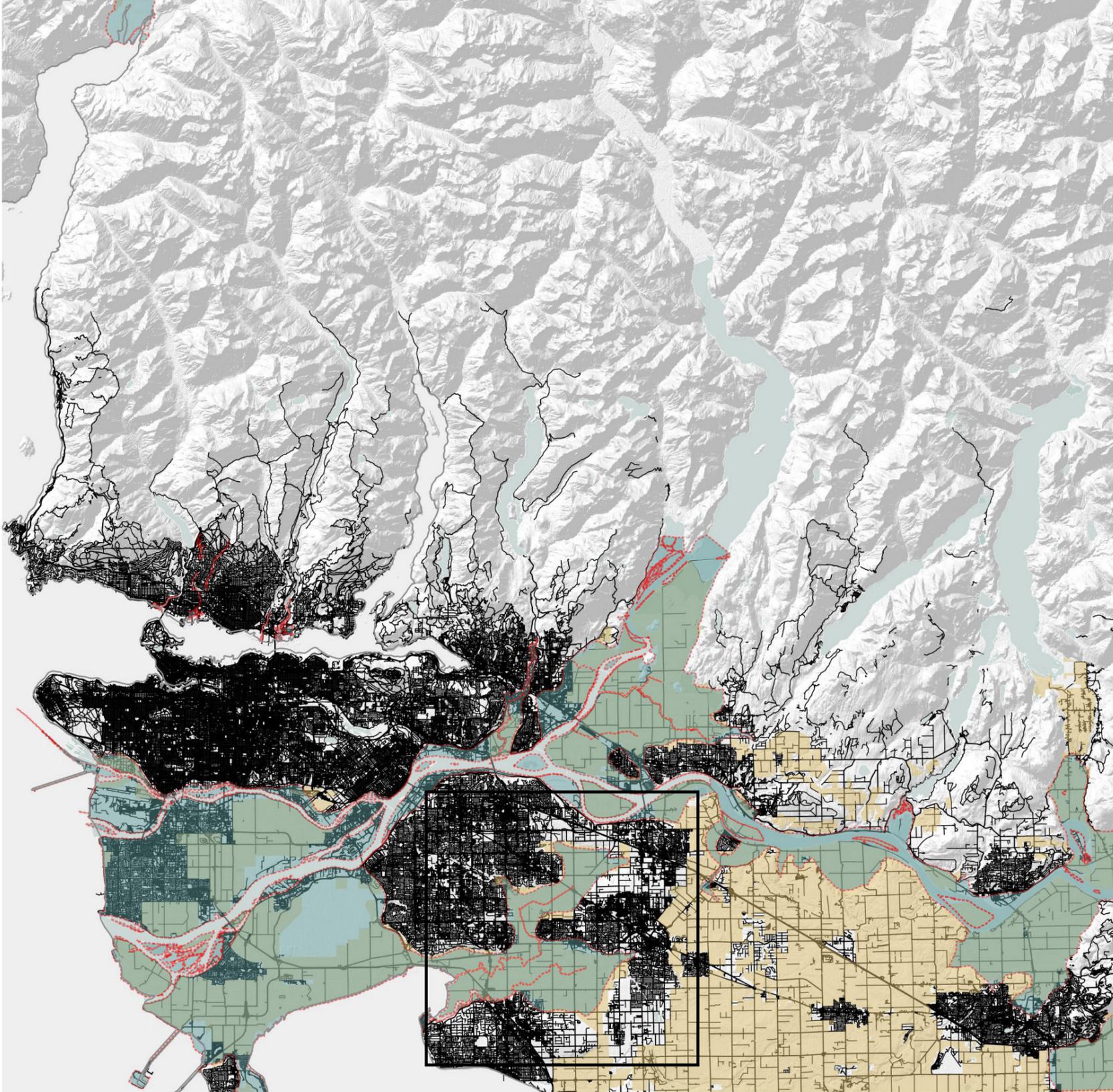
What are the environmental challenges?

# Climate Change Predictions



"Canada's Top Climate Change Risks - The Expert Panel on Climate Change Risks and Adaptation Potential" 2019, p. 29 Source : Council of Canadian Academics

# Flood Vulnerabilities



Flooding extents, aquifers, and irrigation wells. Regional and local scale. Maps by author with data from DataBC

What does this all mean?

**Agriculture is a fundamental part of the regional economy** in the Lower Mainland of British Columbia. However, cultivation is currently driven by an export/import-oriented supply chain model - relying heavily on the US and Asia for local food security. Nearly half of the food consumed in the region is imported while much of the food that is grown locally is exported and processed elsewhere. Furthermore, nearly a **third of all agricultural land is found in areas vulnerable to sea level rise, seasonal flooding, and drought.**

In a world where unpredictable and disruptive events related to climate change and global health pandemics are becoming more common, **reliability on existing supply chains is decreasing** and will have a profound effect on regional food security for many parts of Canada. Implementing a **climate adaptive approach to the spatial and functional organization of agriculture** and development will be essential to foster a **resilient and self-reliant food system** in the Lower Mainland.

Because the territory is vulnerable to climate change and lacks a self-reliant food system, there is **deep uncertainty regarding local food security and the future of BC's agricultural landscapes**

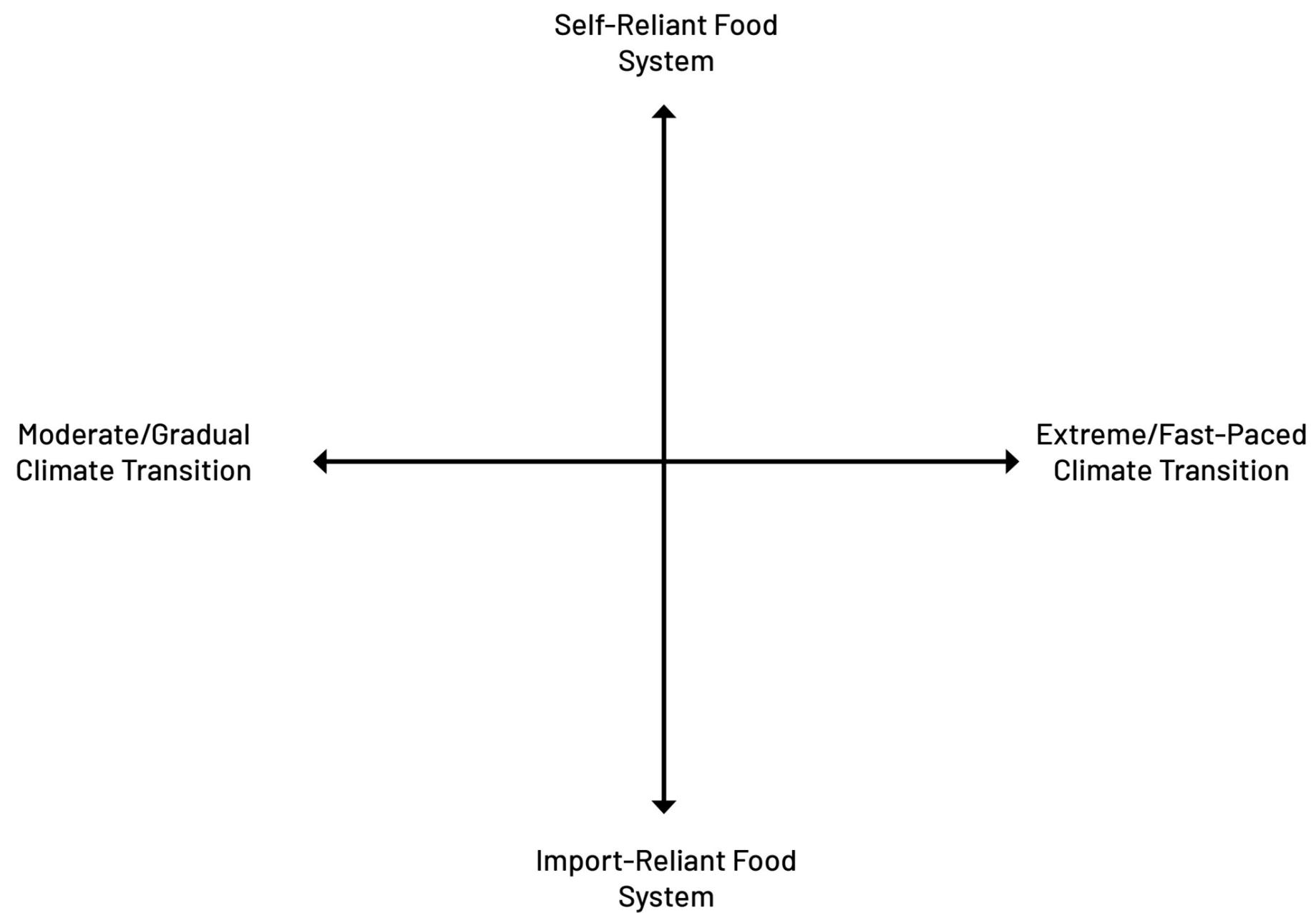
How can the region increase agricultural self-reliance and become more climate-adaptive at the same time?

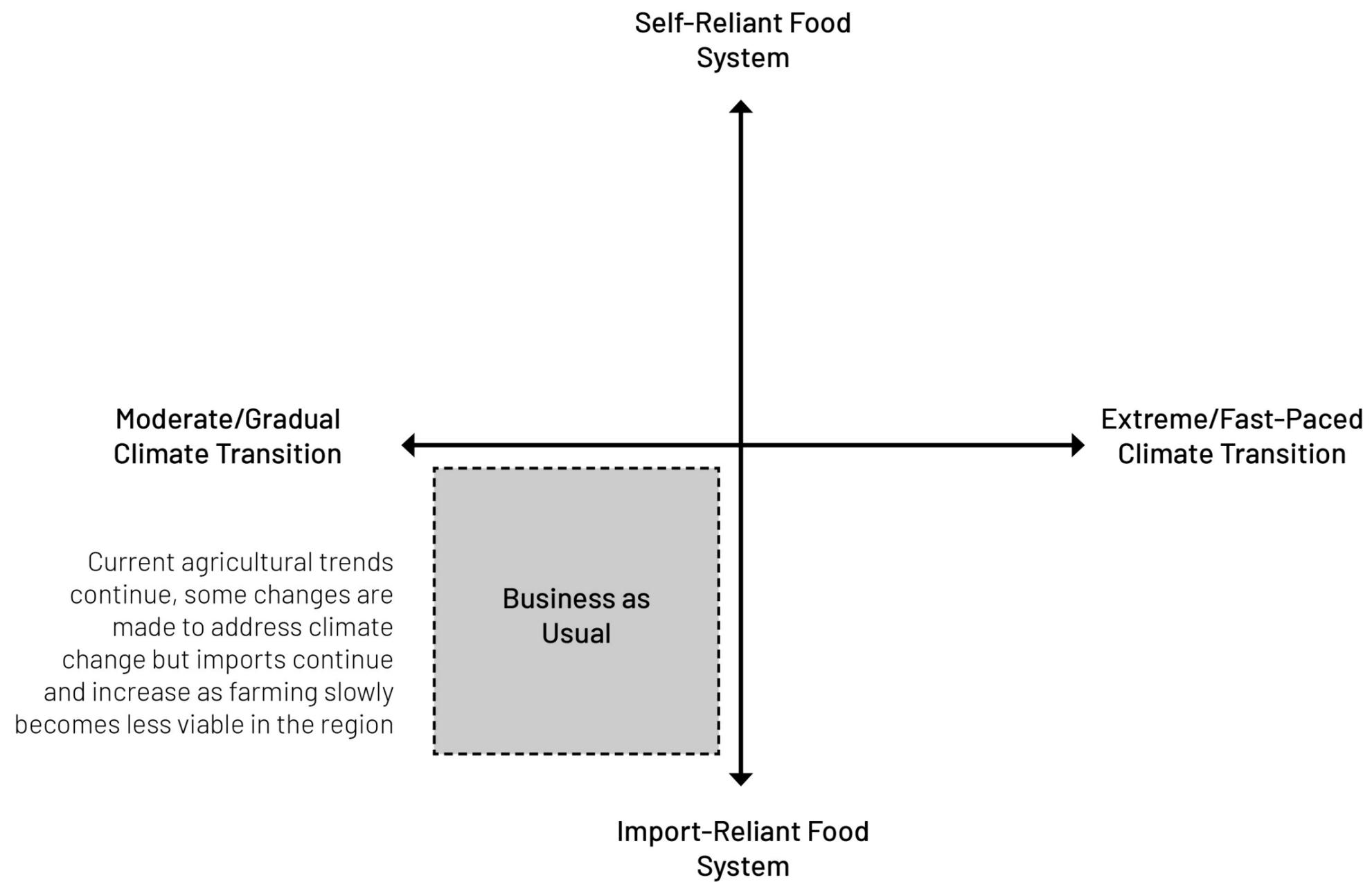
## **Driving Forces**

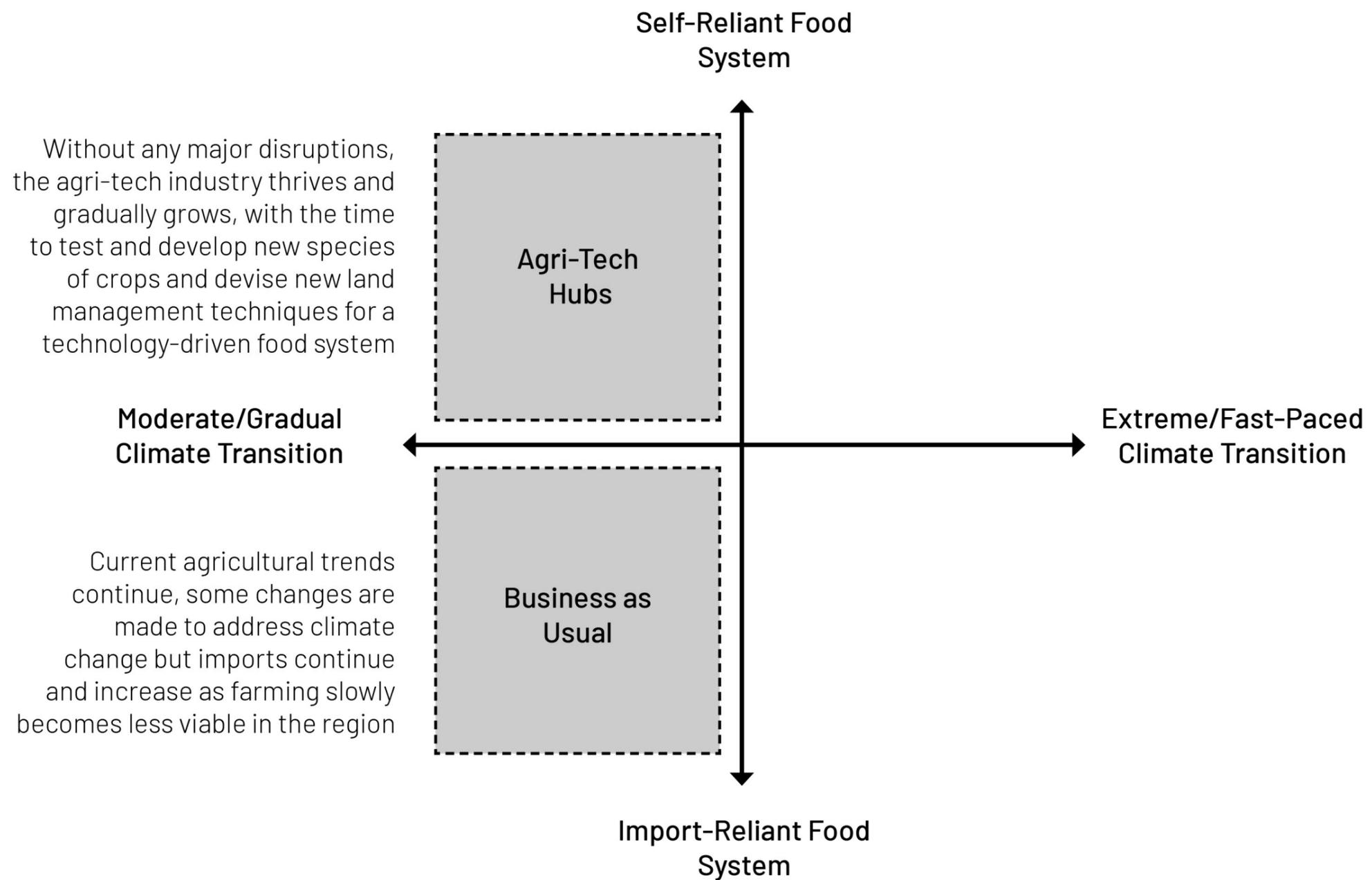
Necessity for Self-Reliant Food System

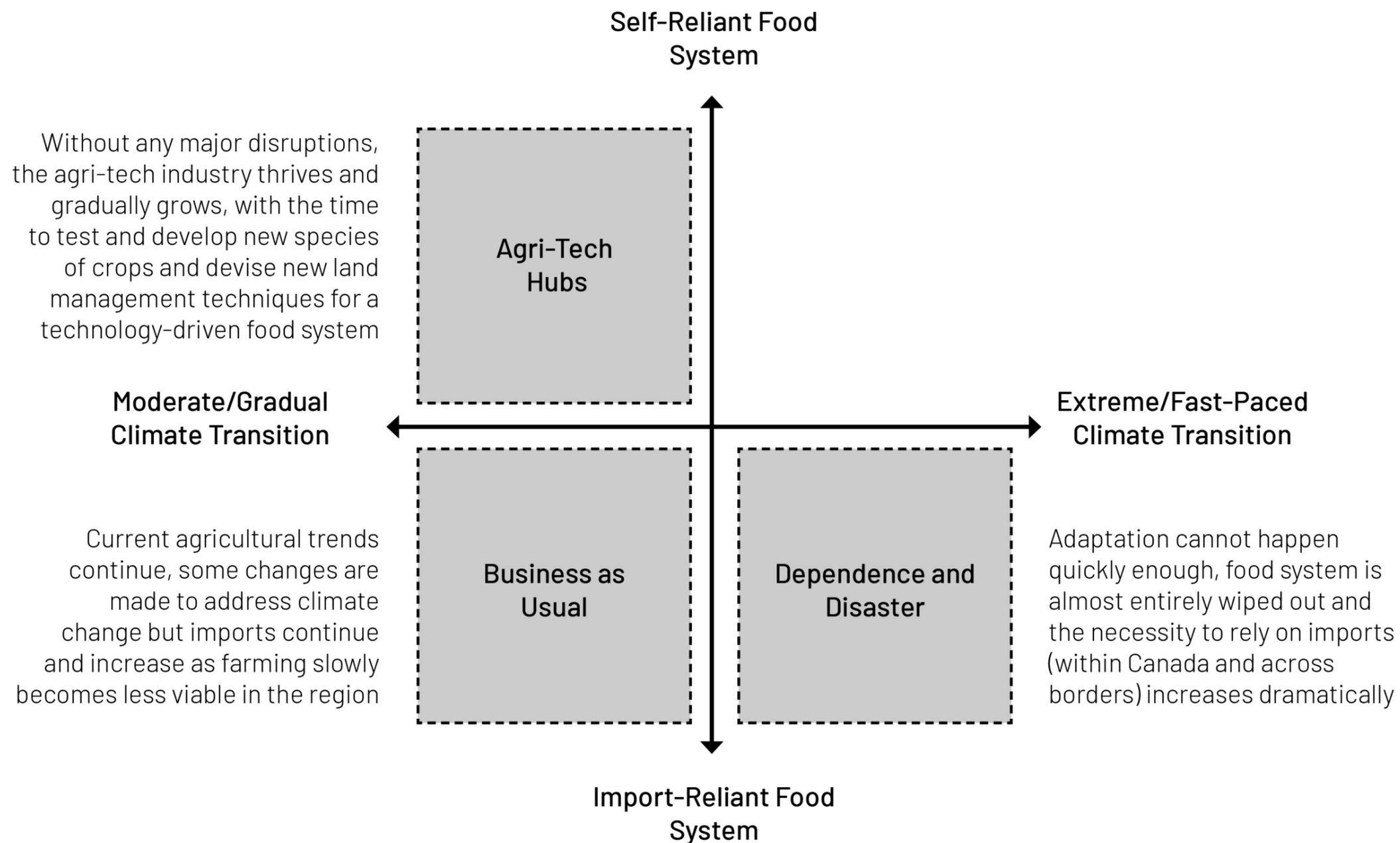
Population Growth - Food demand

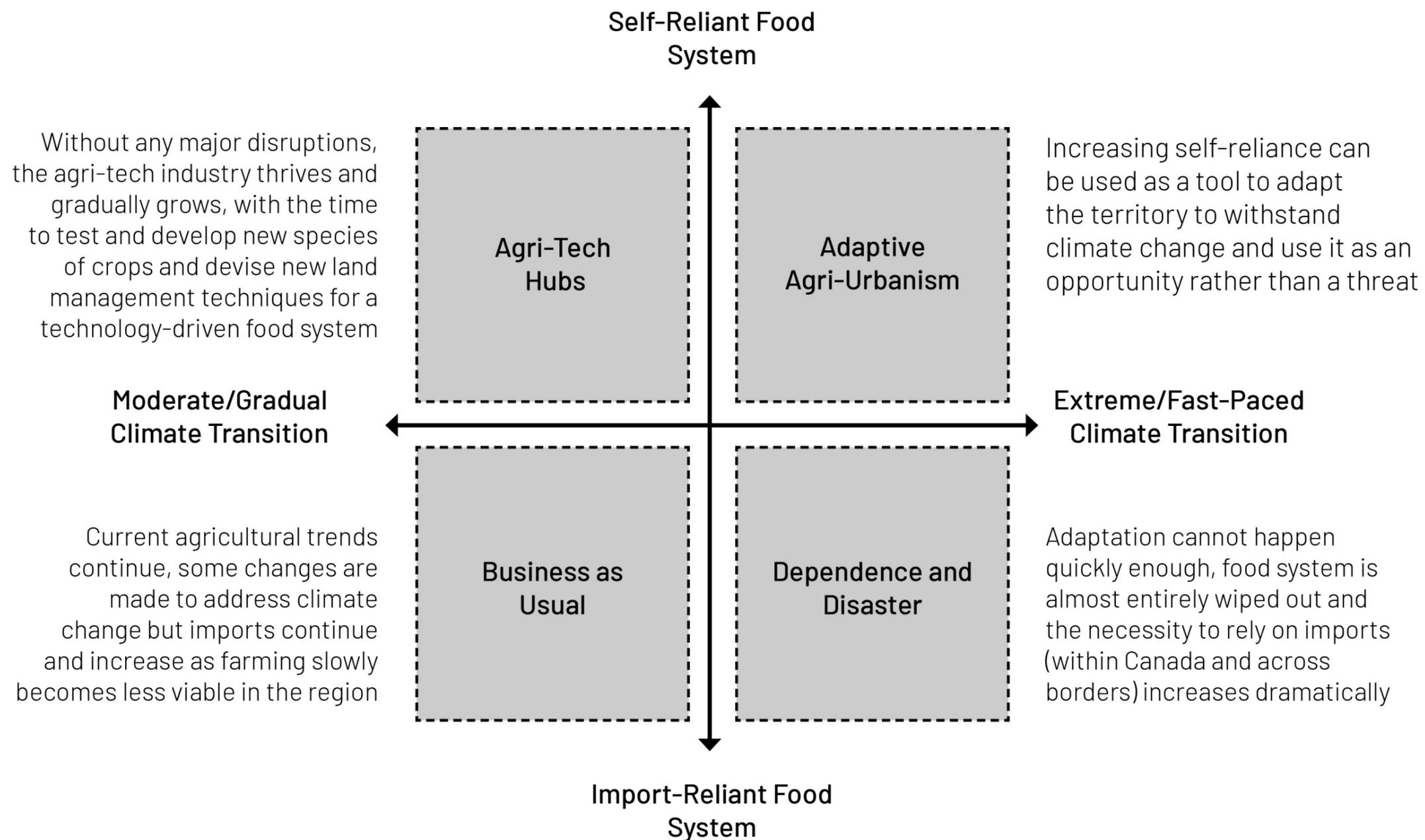
Climate Transition (intensity and rate)







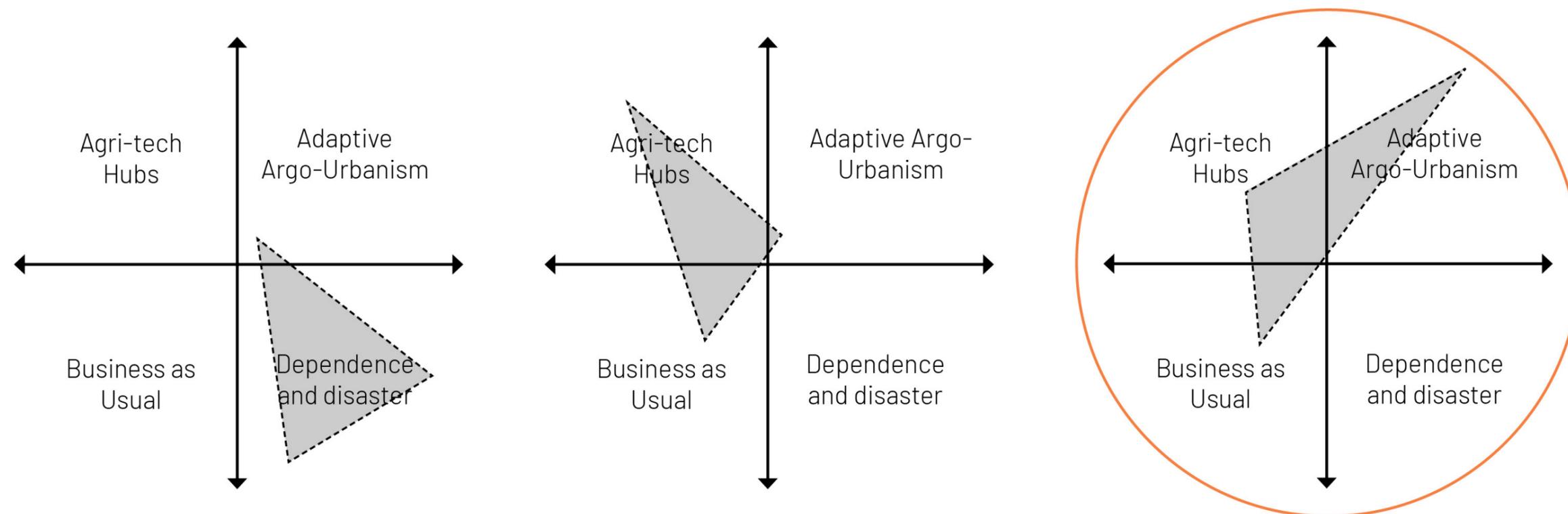


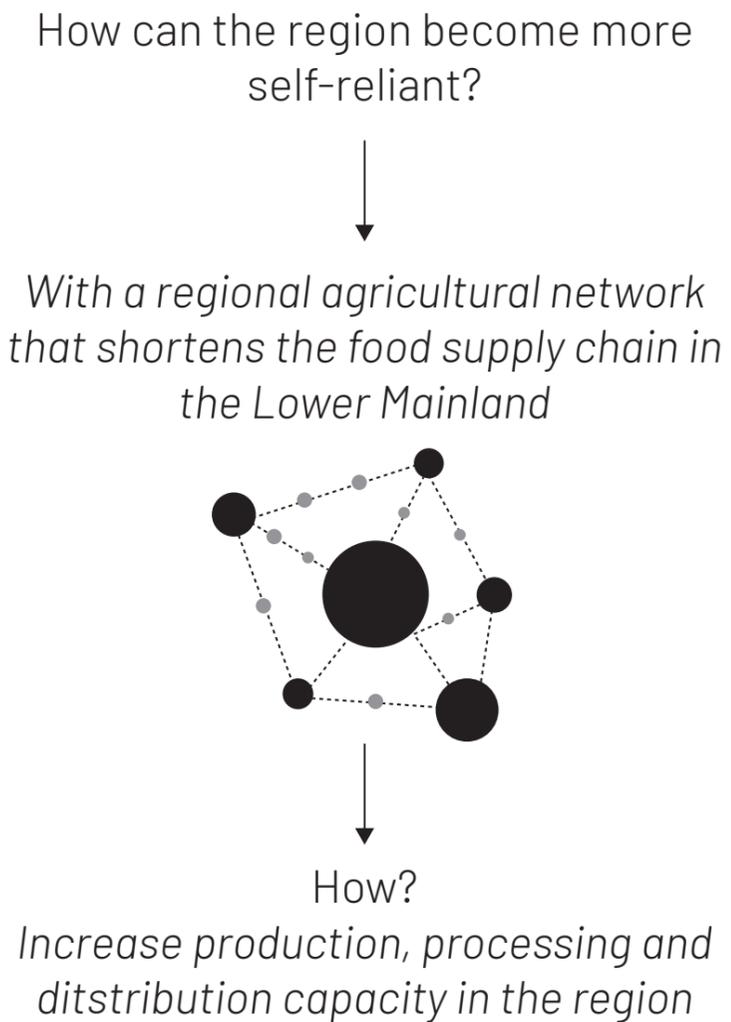


## Scenario Exploration - Essential Elements

Which elements of each scenario are **desirable or unavoidable**?

How can these set the goals for design?



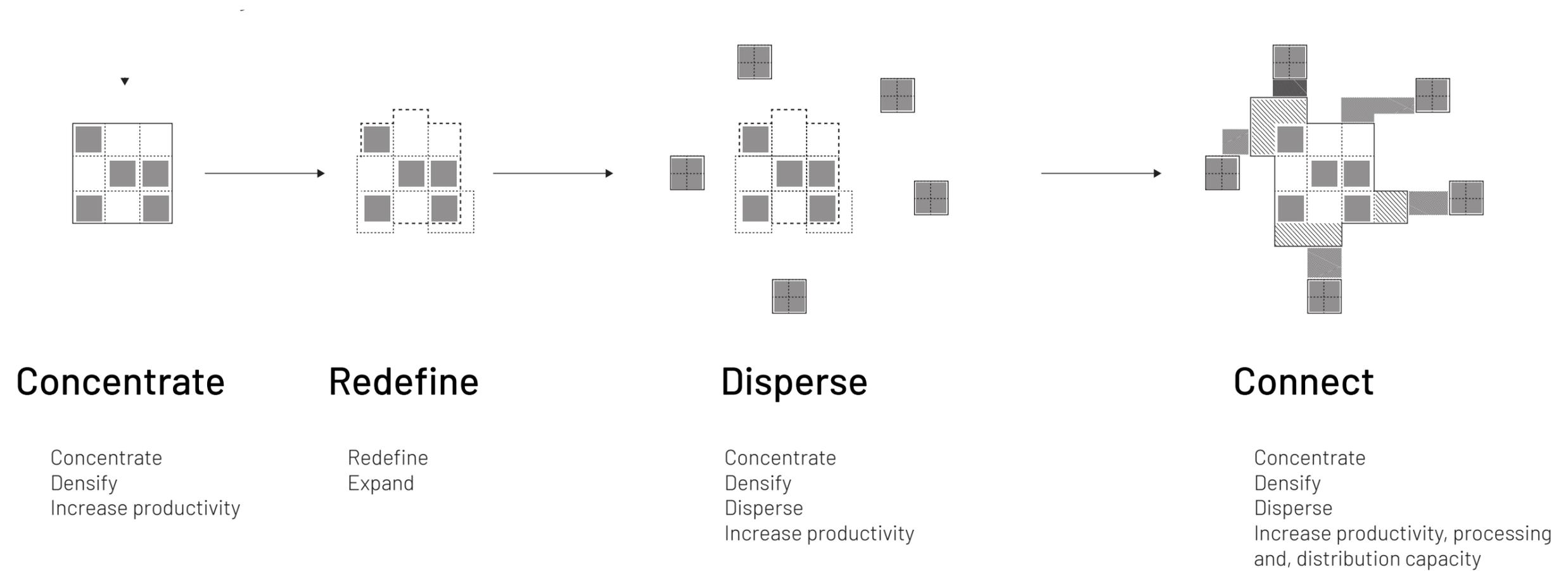


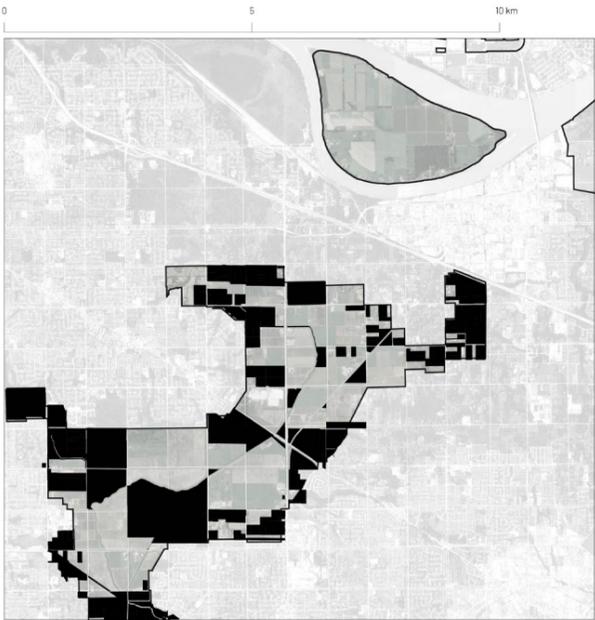
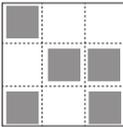
## Goals

Increase and diversify food production  
**through** new typologies of agriculture

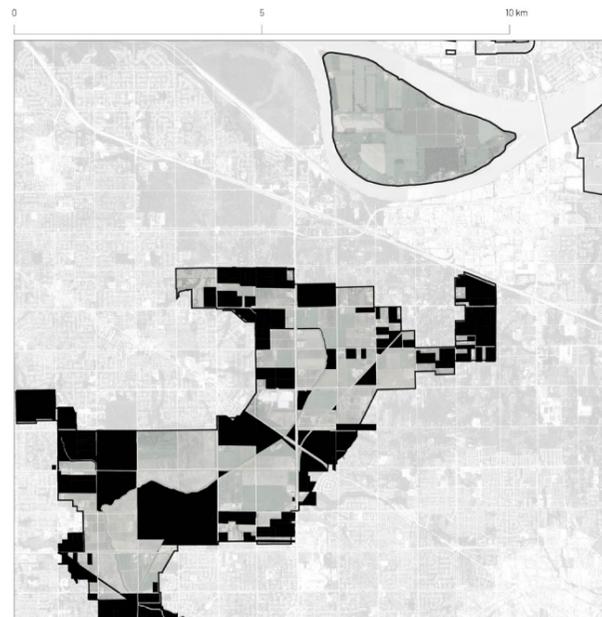
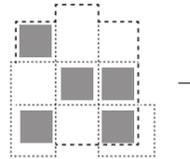
Connect people with farmers and food  
**by providing** space for communities,  
employment, and technological innovation

Adapt territory to climate transition  
**by transforming** how land and water is  
managed

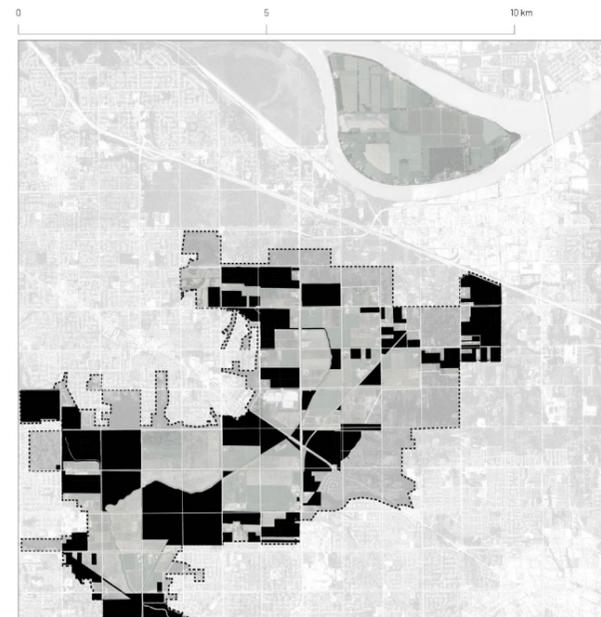




Clustering of highly productive agricultural practices

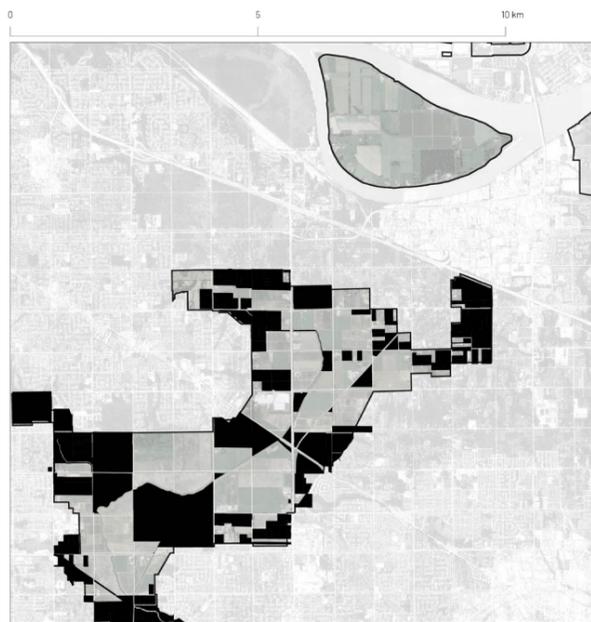
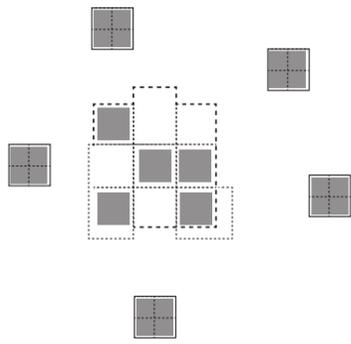


Clustering of highly productive agricultural practices

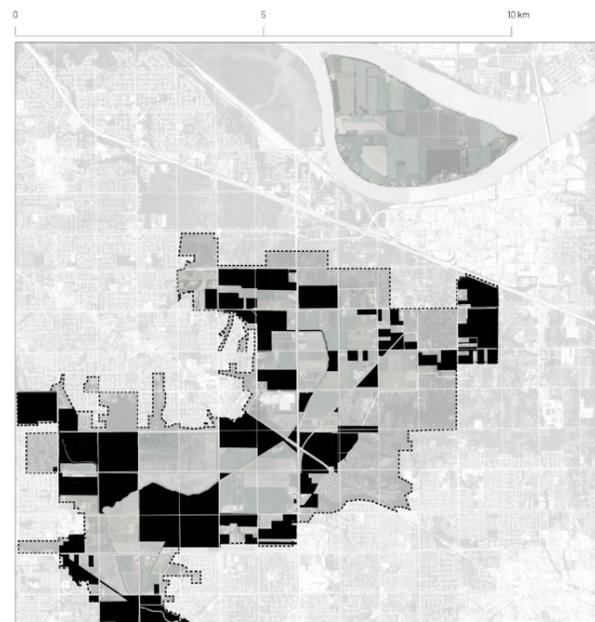


Redefinition of ALR boundaries

# Disperse



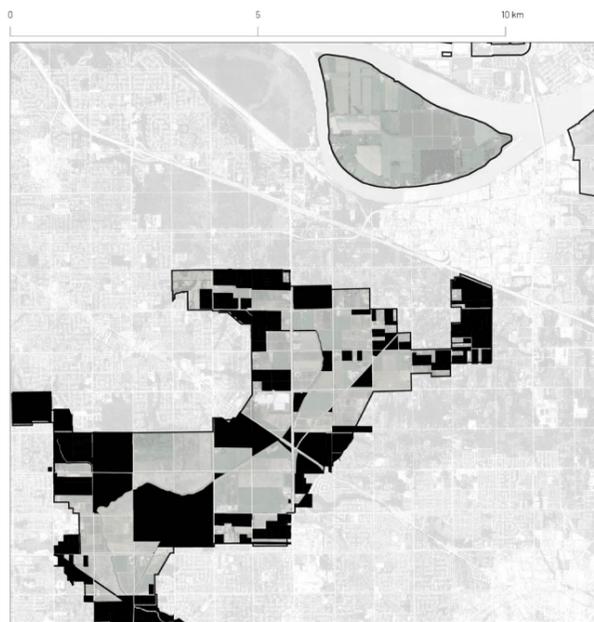
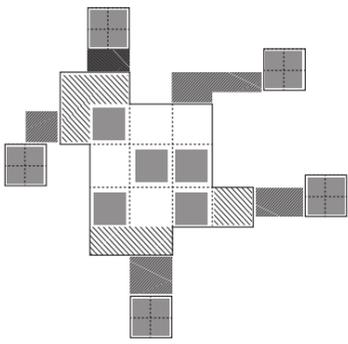
Clustering of highly productive agricultural practices



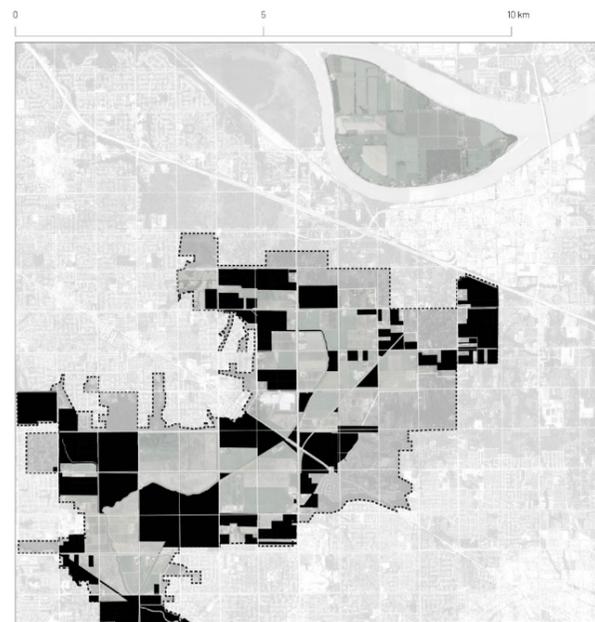
Redefinition of ALR boundaries



Dispersion of productive activities outside of the boundaries of the ALR and into the urban fabric



Clustering of highly productive agricultural practices



Redefinition of ALR boundaries

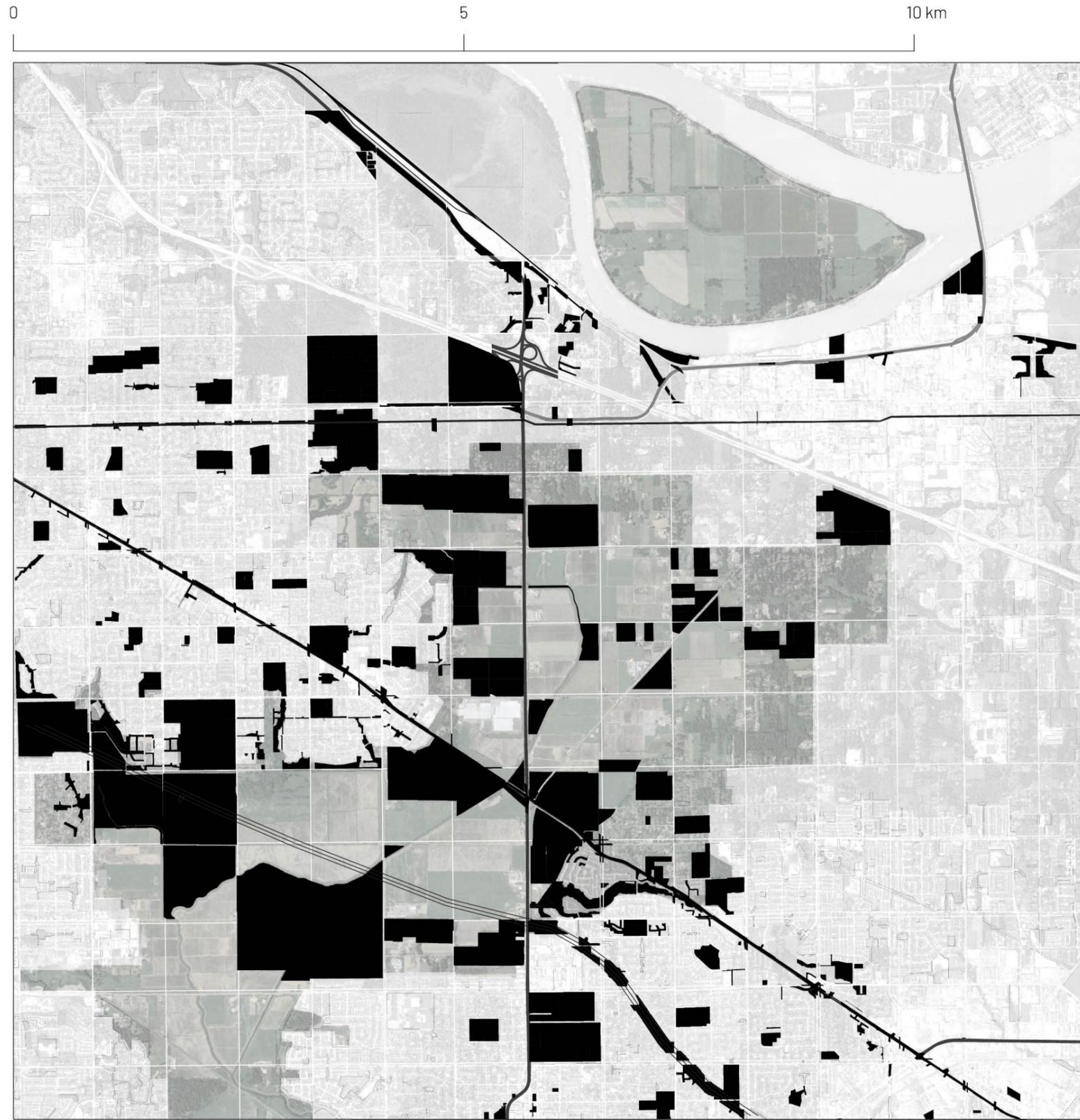


Dispersion of productive activities outside of the boundaries of the ALR and into the urban fabric



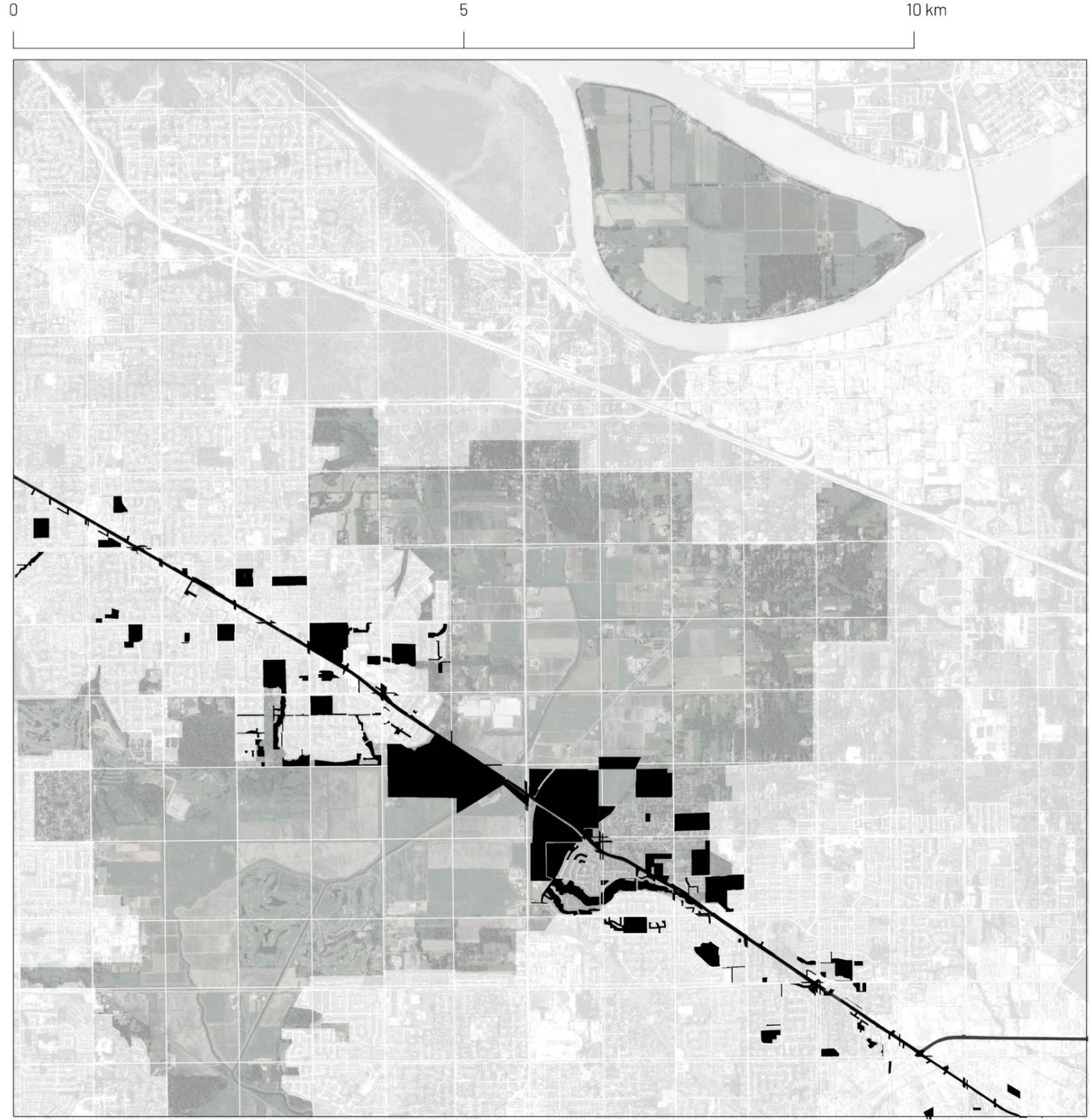
Connect and specify corridors that bridge them through a series of smaller community-oriented interventions

# Corridors



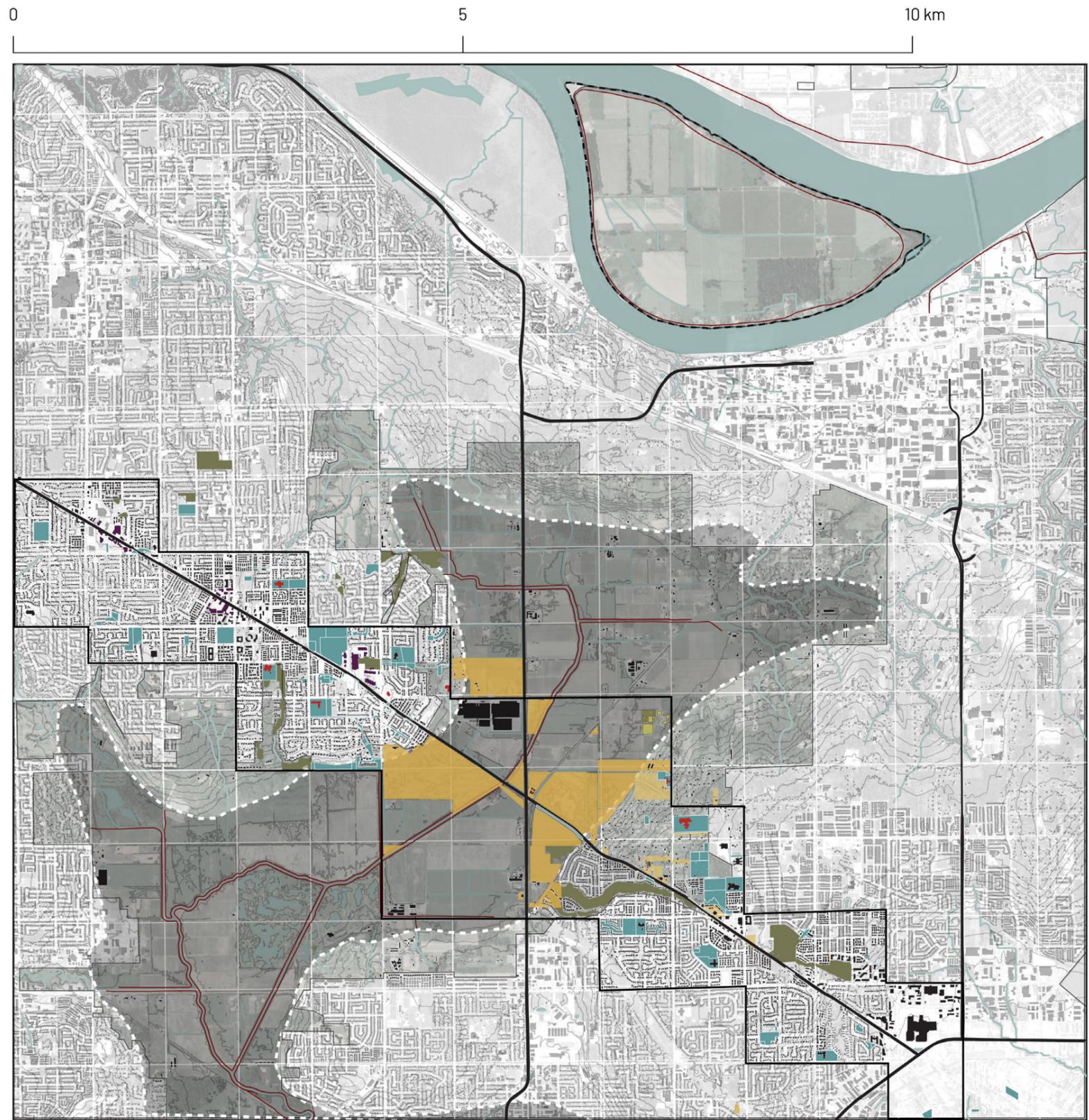
# Corridors

*Fraser Corridor*



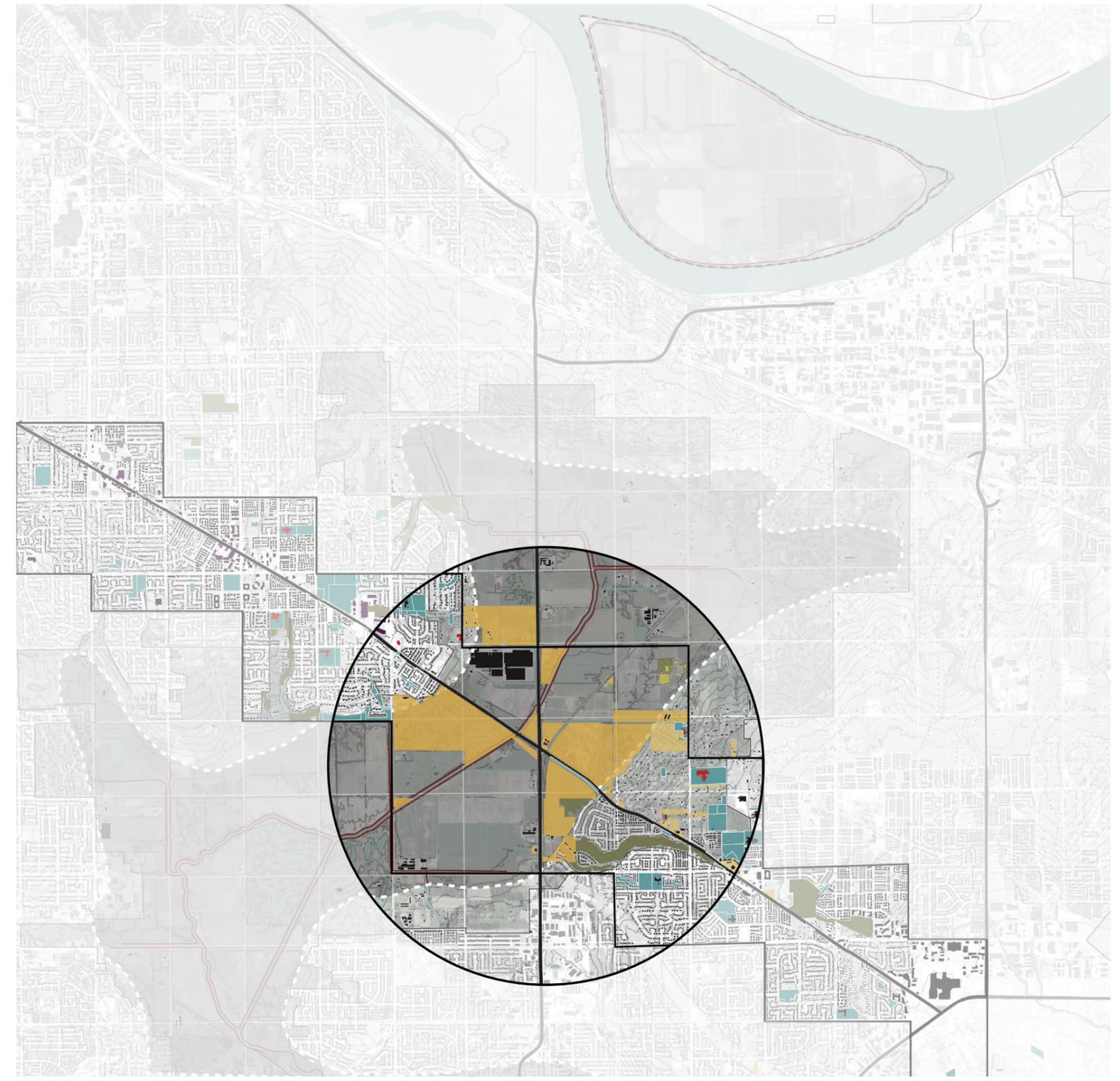
# Fraser Corridor

*Factors to Consider*



# Fraser Corridor

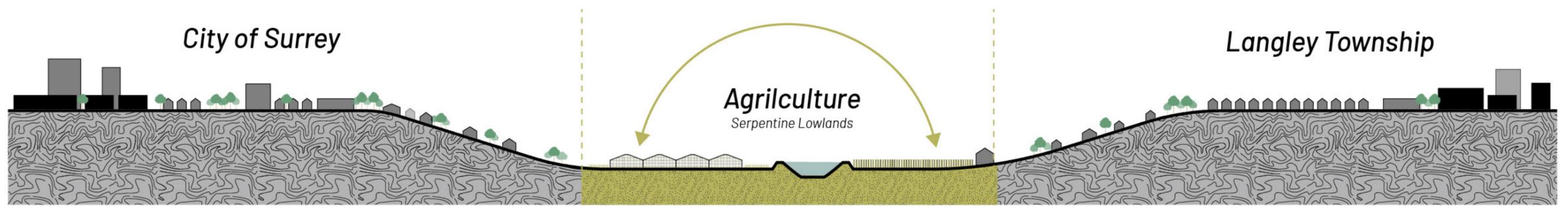
Step #1 : **Concentrate**  
*Stimulate a Productive Centre*



- Not used for Farming
- Municipal Property
- Existing Farms
- River Dike
- Natural Areas
- Primary Roads
- Commercial Centres
- Institutional Buildings
- Flood Zone

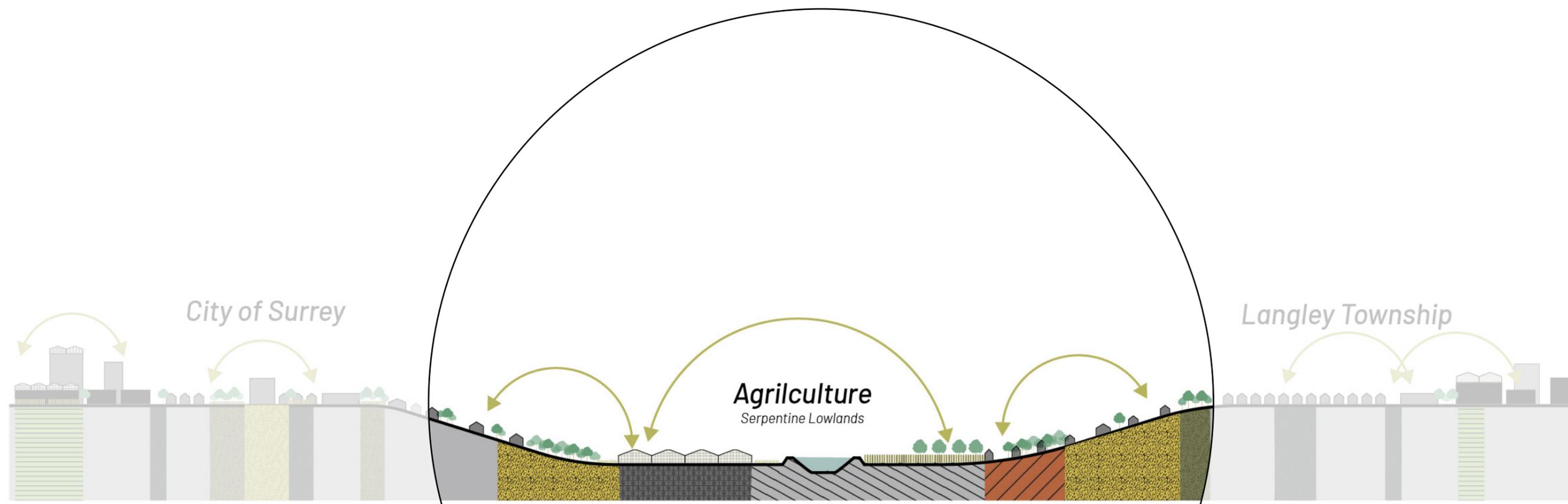
# Fraser Corridor

Existing Functions



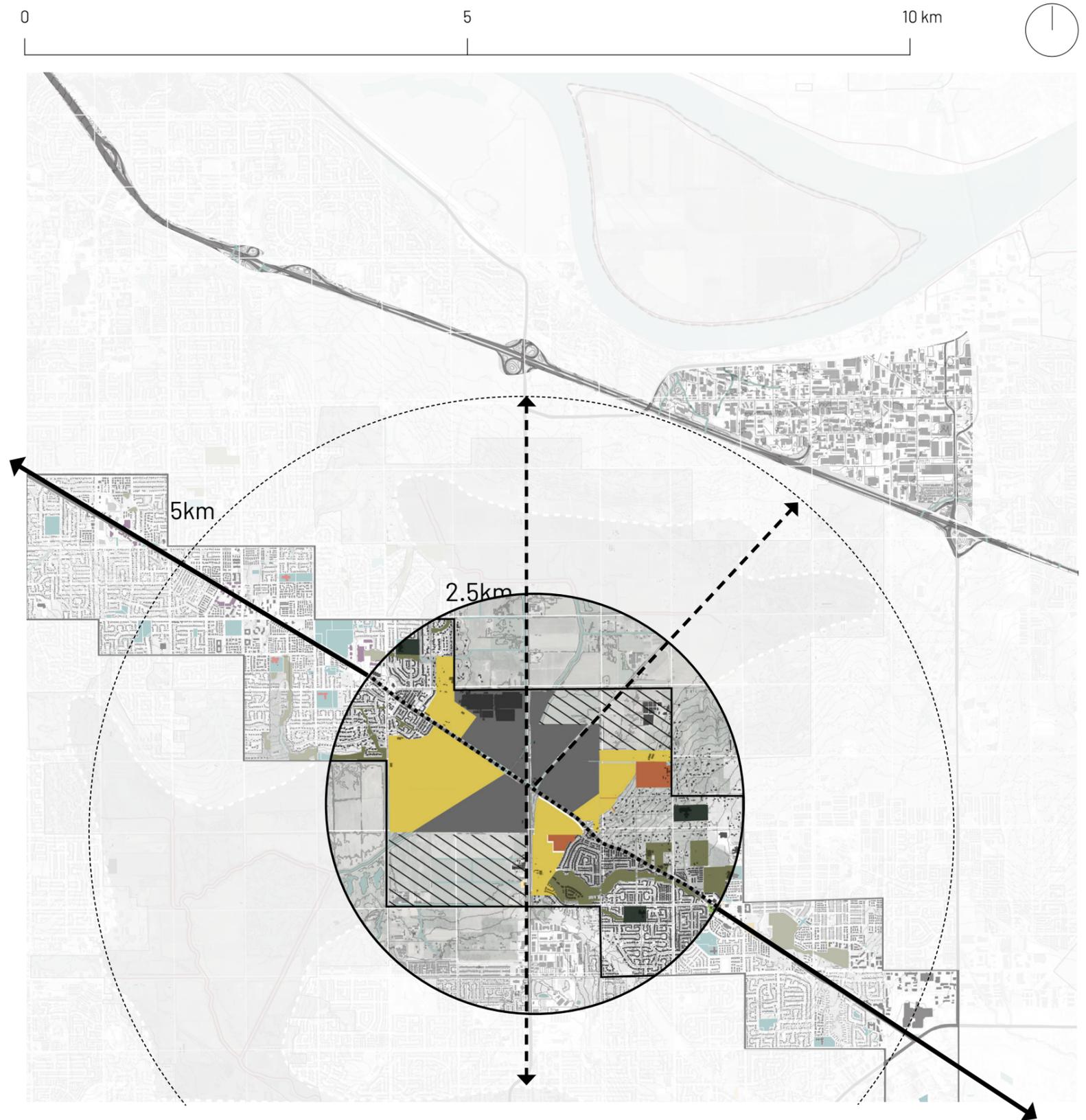
# Productive Centre

## Proposed Zones

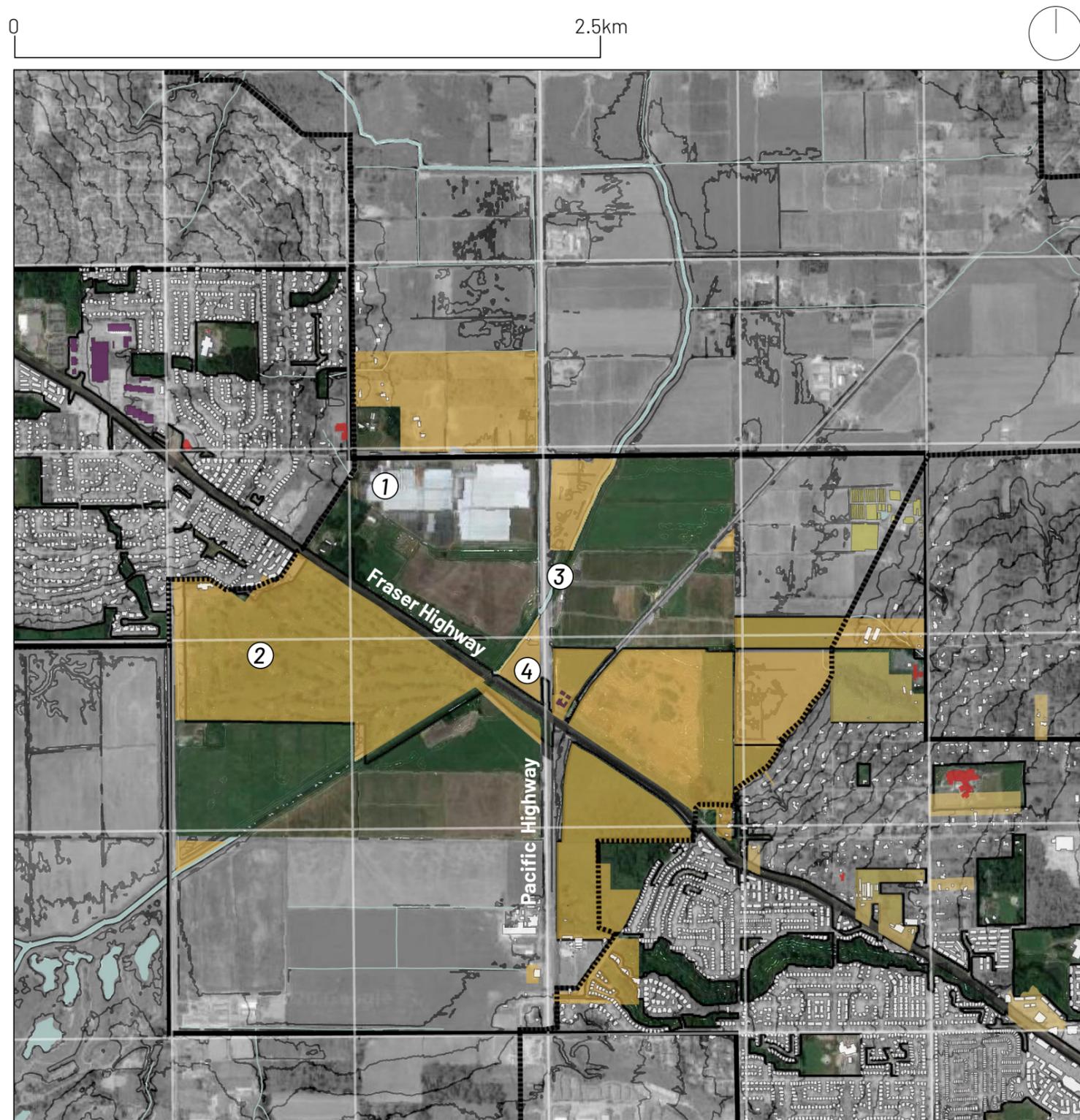


- Food Forest
- Community Gardens
- Agro-forestry Crops
- Low-Impact Communities
- Greenhouse Production
- Existing Active Farms

# Productive Centre Proposed Zones



- Food Forest
- Community Gardens
- Agro-forestry Crops
- Low-Impact Communities
- Greenhouse Production
- Existing Active Farms



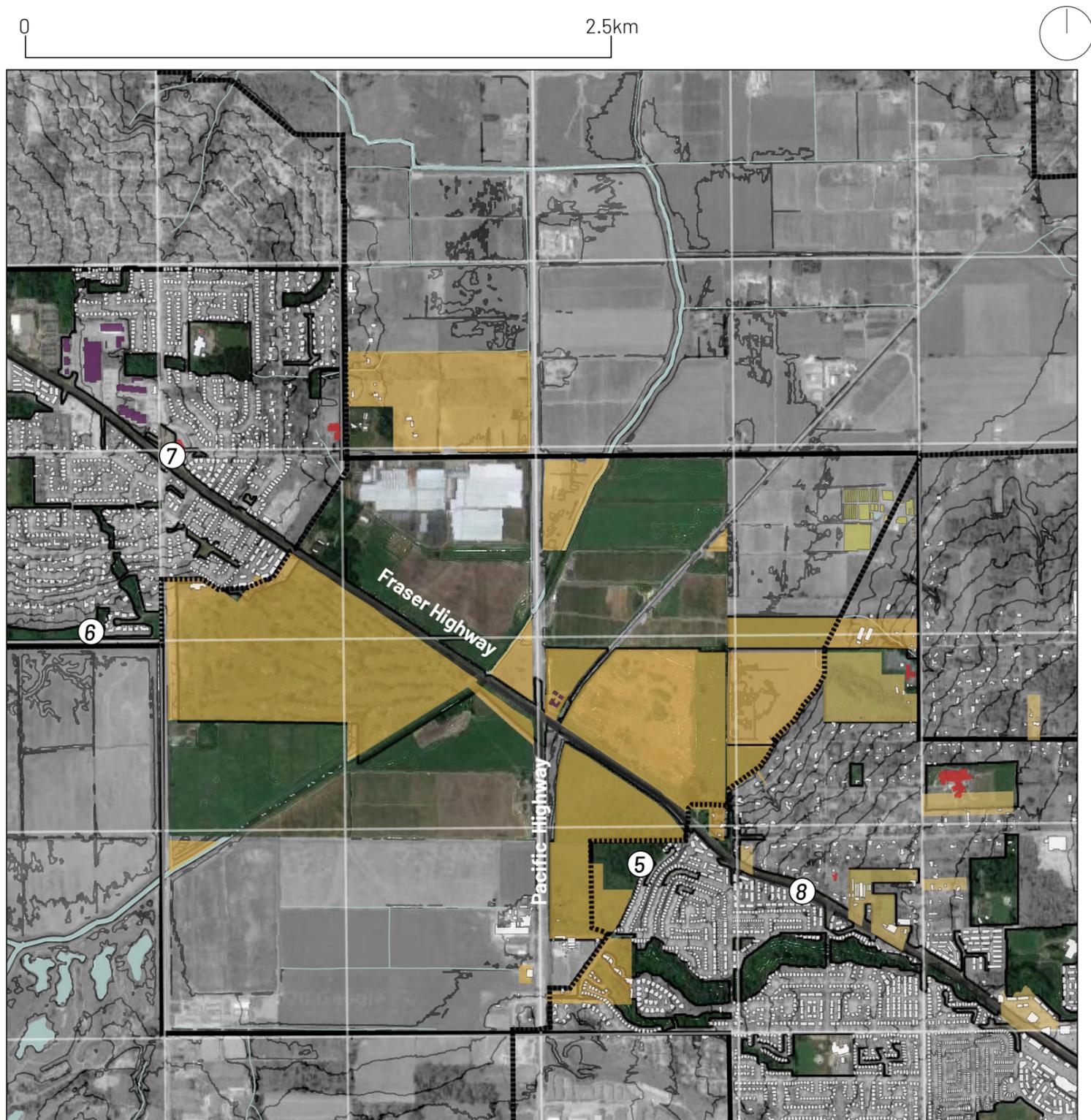
- ① Burnaby Lakes Greenhouses Ltd.
- ② Surrey Golf Club
- ③ Serpentine River
- ④ Honeybee Centre

- Uncultivated Farmland
- ALR boundary
- Educational and Religious Facilities
- Commercial and Office Centres
- Existing Farms
- Residential Neighbourhoods

## Productive Centre

### Existing Spatial Quality



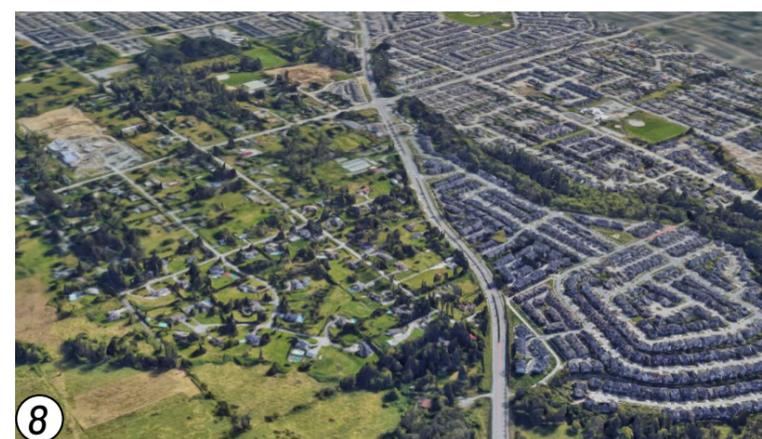
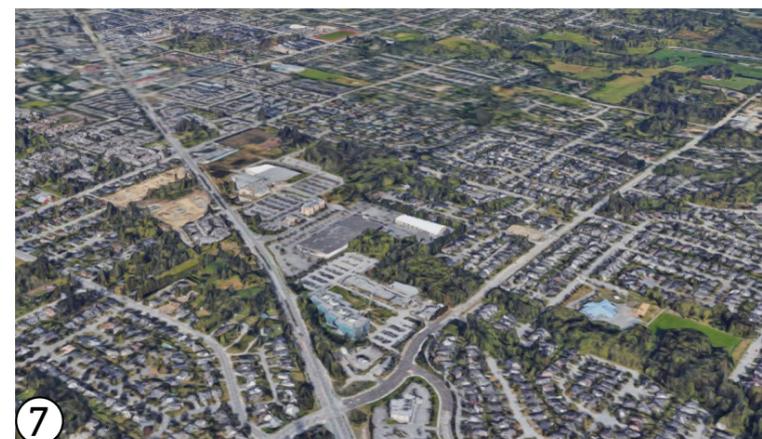


- ⑤ North Creek Park
- ⑥ Neighbourhood Forests
- ⑦ City of Surrey
- ⑧ Langley Township

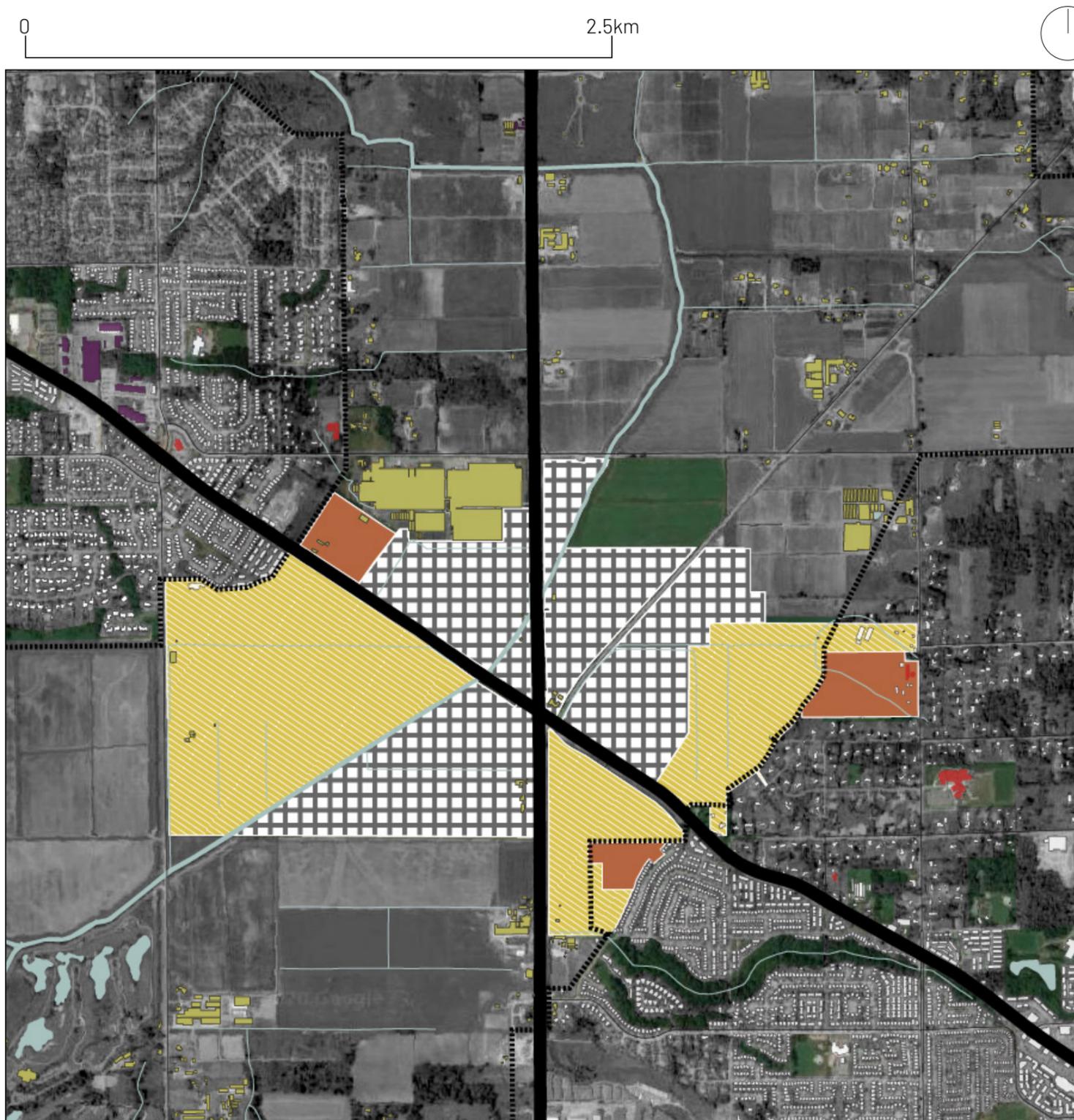
- Uncultivated Farmland
- ▬ ALR boundary
- Educational and Religious Facilities
- Commercial and Office Centres
- Existing Farms
- Residential Neighbourhoods

## Productive Centre

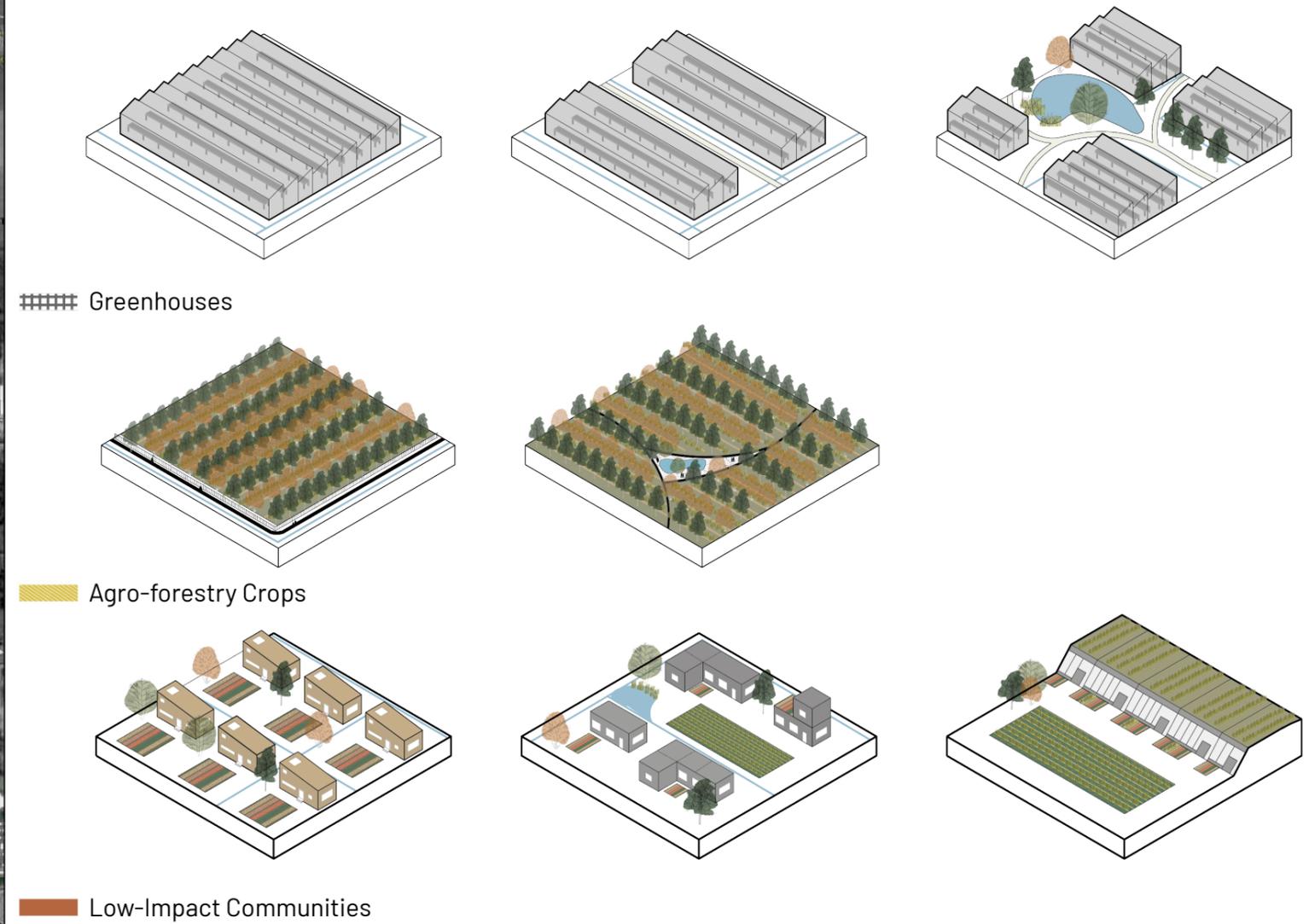
### Existing Spatial Quality

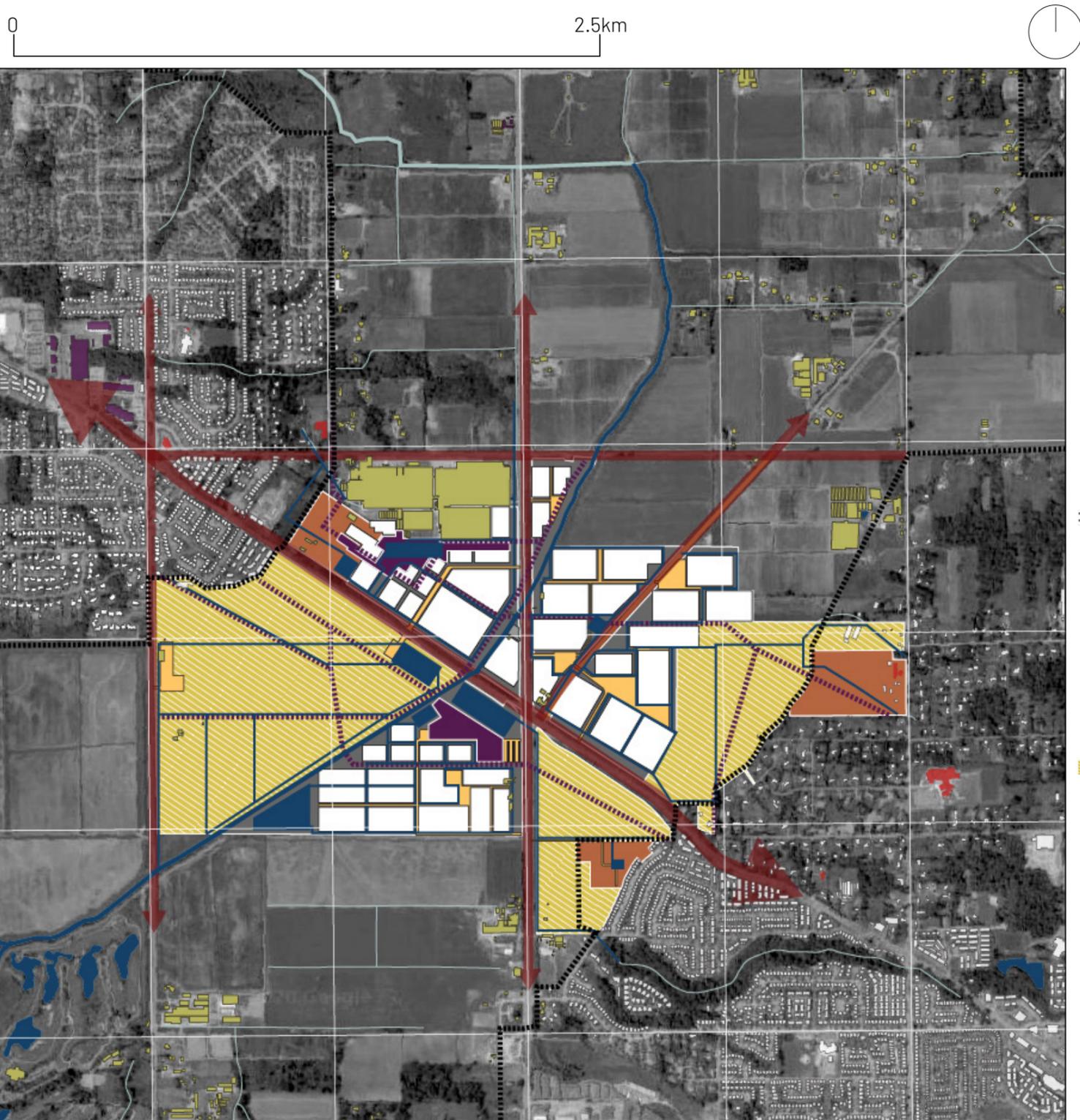


# Productive Centre Strategic Interventions



- ##### Greenhouses
- ==== Agro-forestry Crops
- Low-Impact Communities
- Uncultivated Farmland
- - - - - ALR boundary
- Educational and Religious Facilities
- Commercial and Office Centres
- Existing Farms
- Residential Neighbourhoods

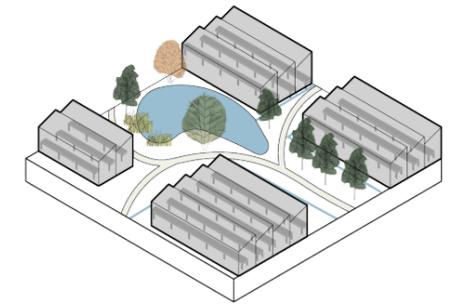
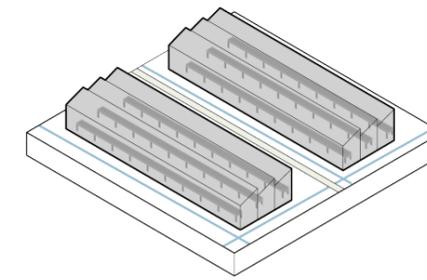
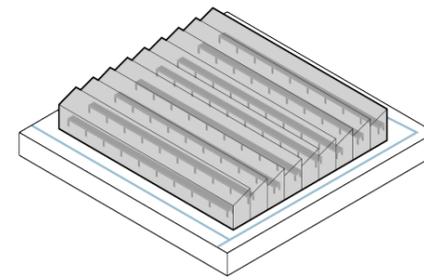




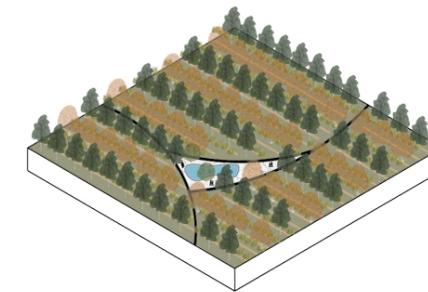
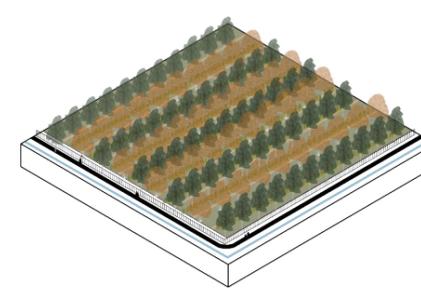
- Agro-forestry Crops
- Low-Impact Communities
- Water Management Network
- Public Space
- Greenhouses
- Infrastructural and Grid Connections
- Uncultivated Farmland
- ALR boundary
- Educational and Religious Facilities
- Commercial and Office Centres
- Existing Farms
- Residential Neighbourhoods

# Productive Centre

Strengthening and Expanding the Network while Creating Permeability in the Grid

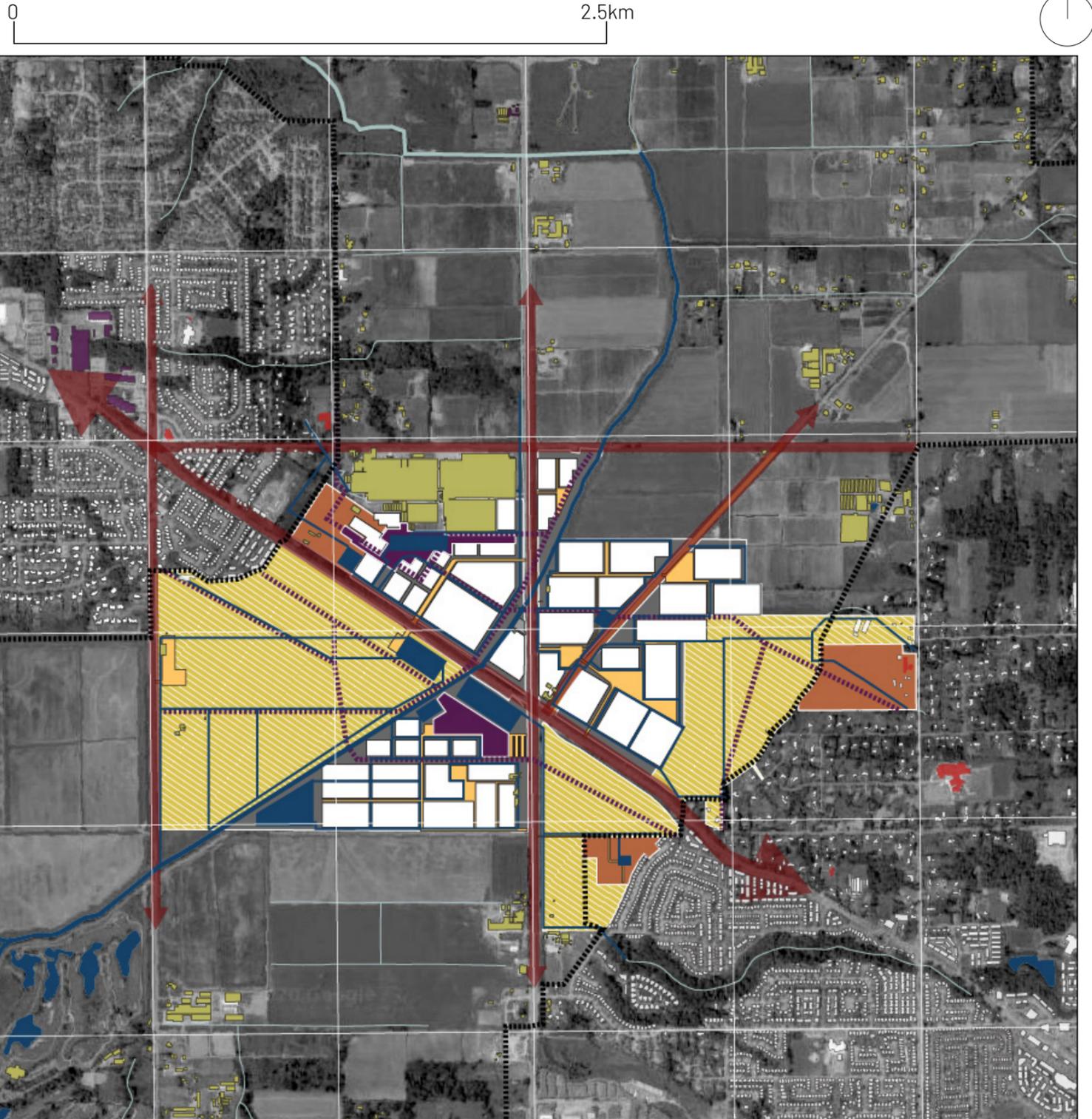


Greenhouses



Agro-forestry Crops

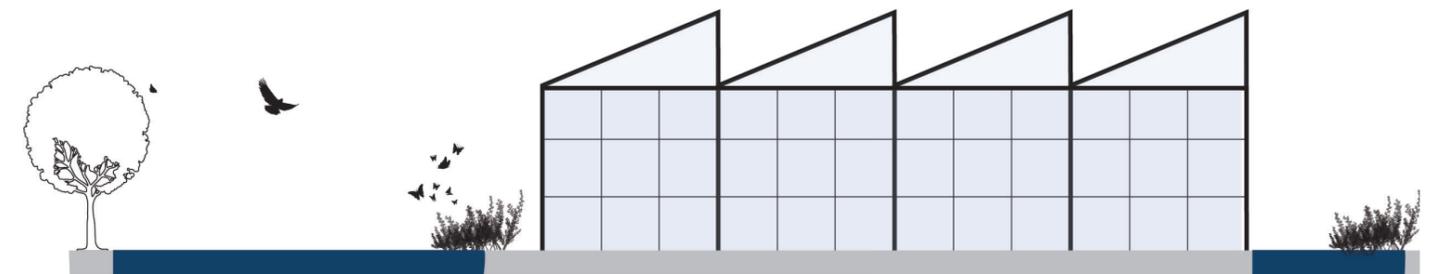
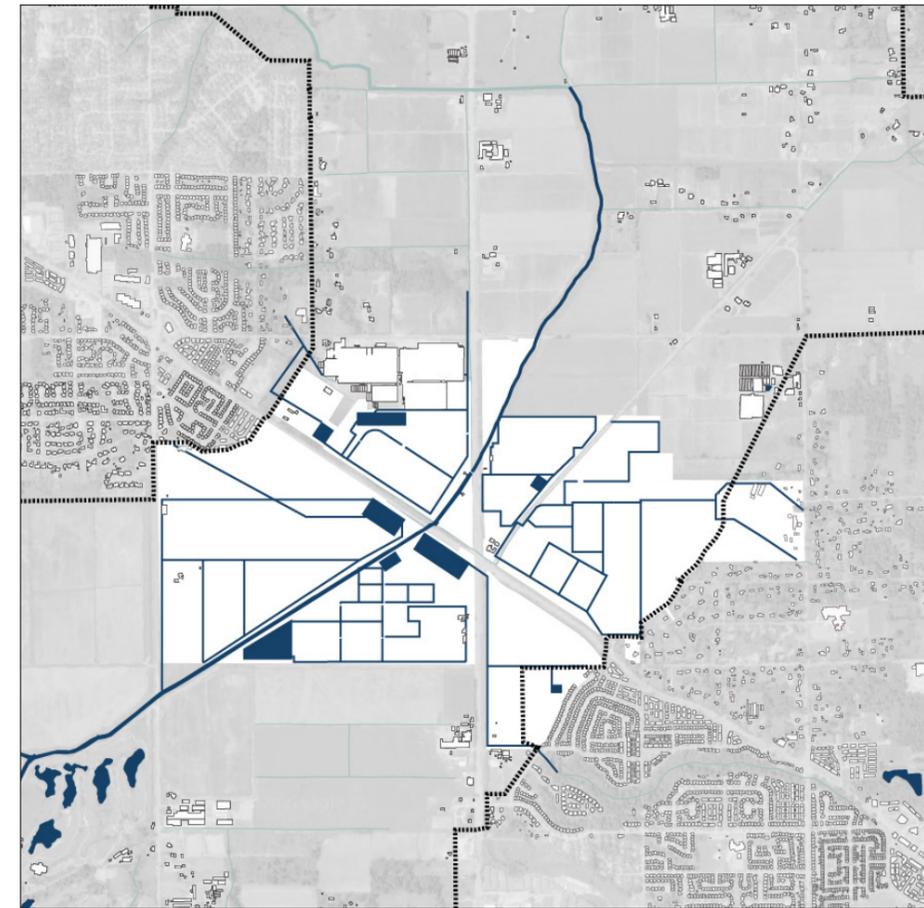


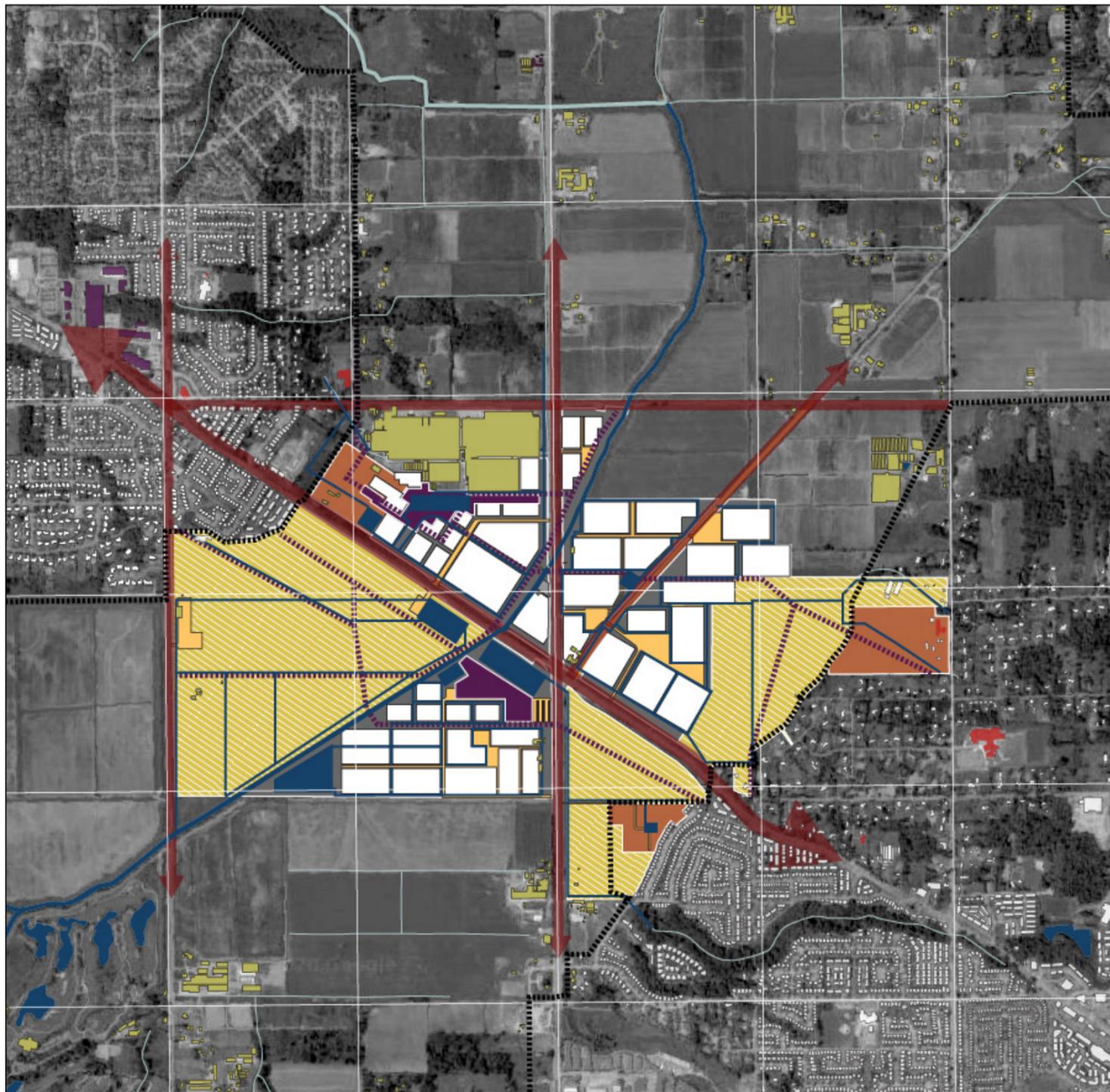


- Agro-forestry Crops
- Low-Impact Communities
- Water Management Network
- Public Space
- Greenhouses
- Infrastructural and Grid Connections
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- ALR boundary
- Educational and Religious Facilities
- Commercial and Office Centres
- Existing Farms
- Residential Neighbourhoods

# Productive Centre

## Water Network

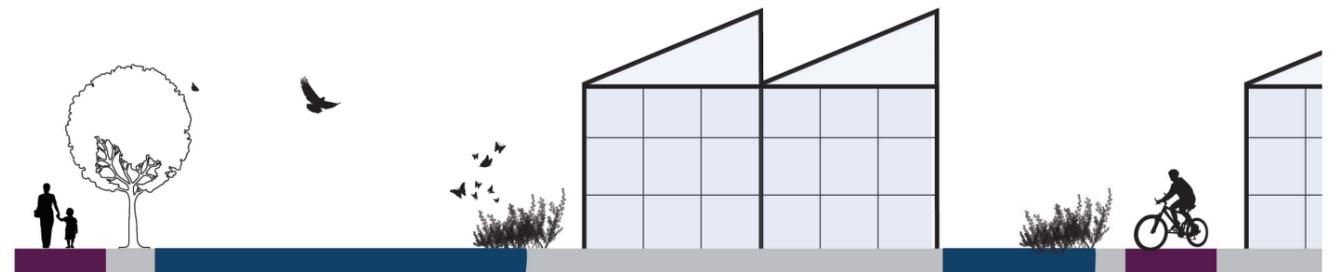
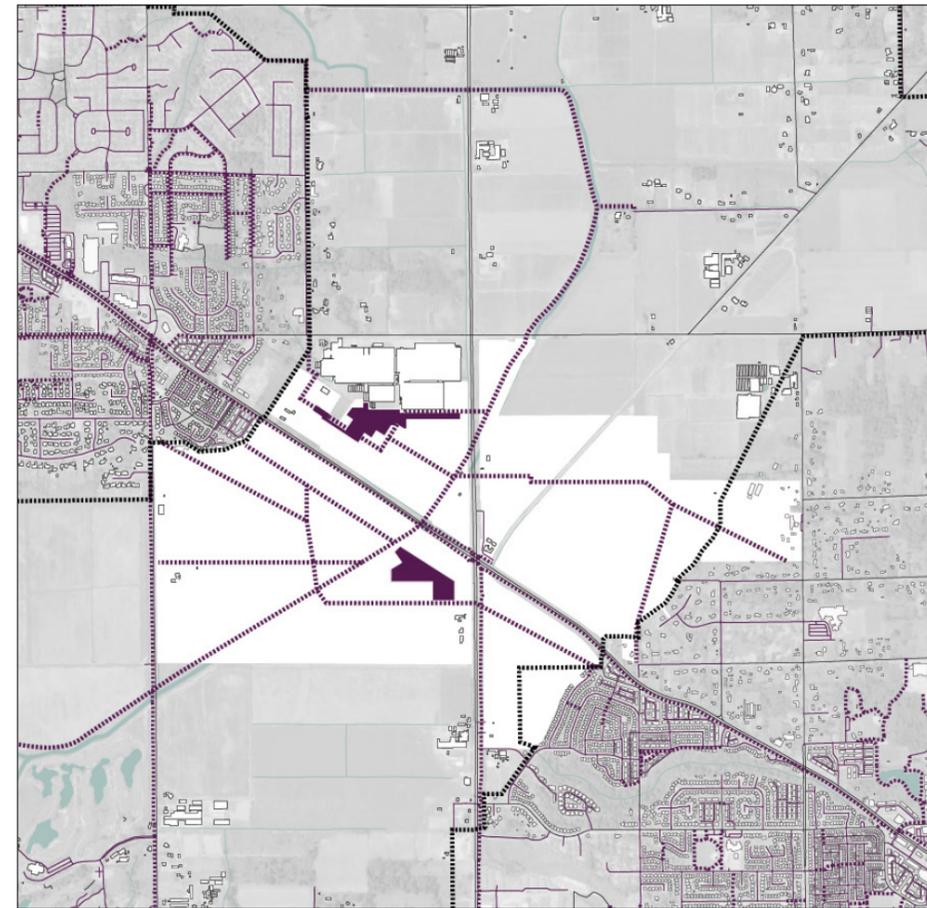




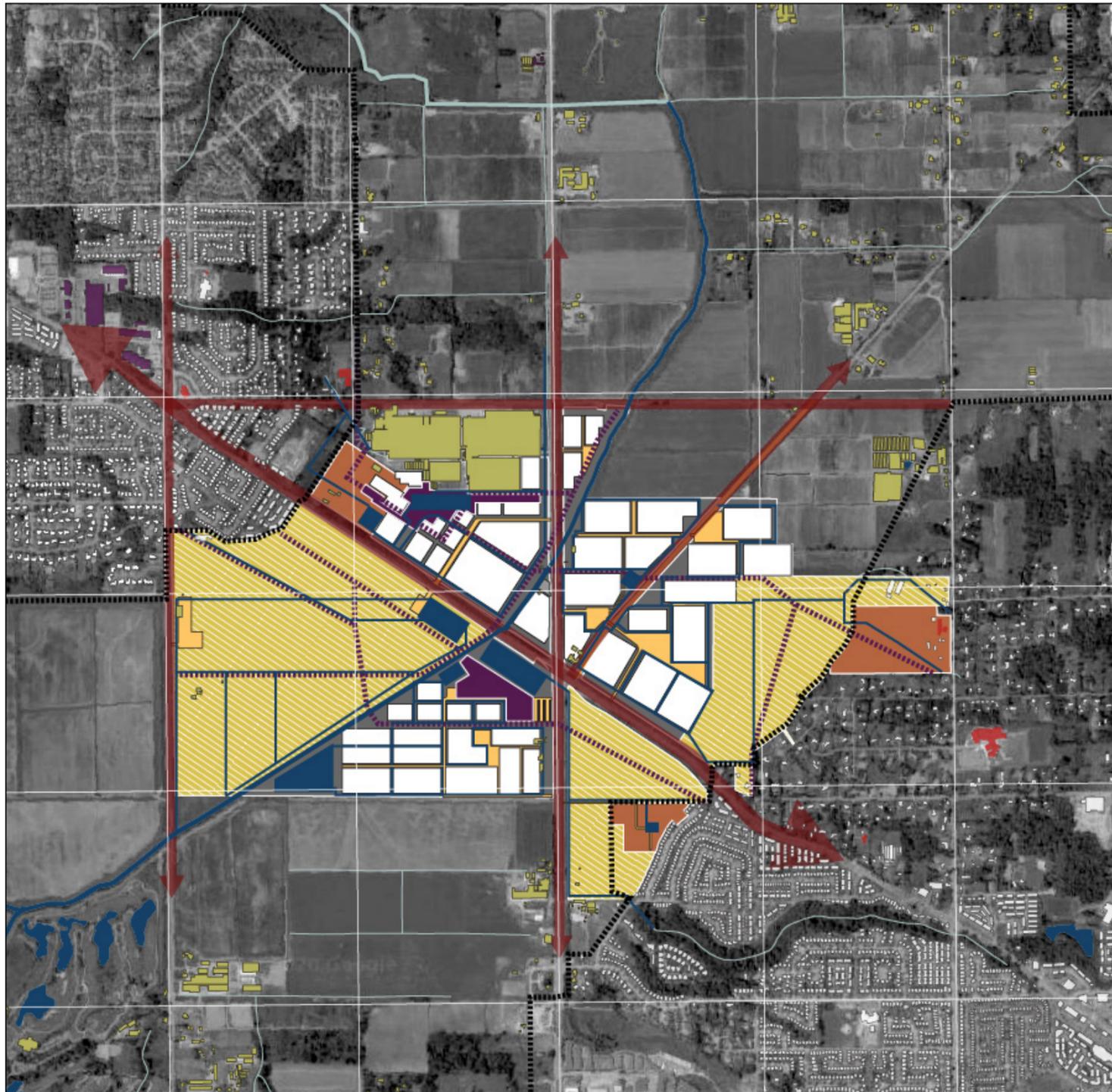
- Agro-forestry Crops
- Low-Impact Communities
- Water Management Network
- Public Space
- Greenhouses
- Infrastructural and Grid Connections
- Uncultivated Farmland
- ALR boundary
- Educational and Religious Facilities
- Commercial and Office Centres
- Existing Farms
- Residential Neighbourhoods

# Productive Centre

## Public Realm Network



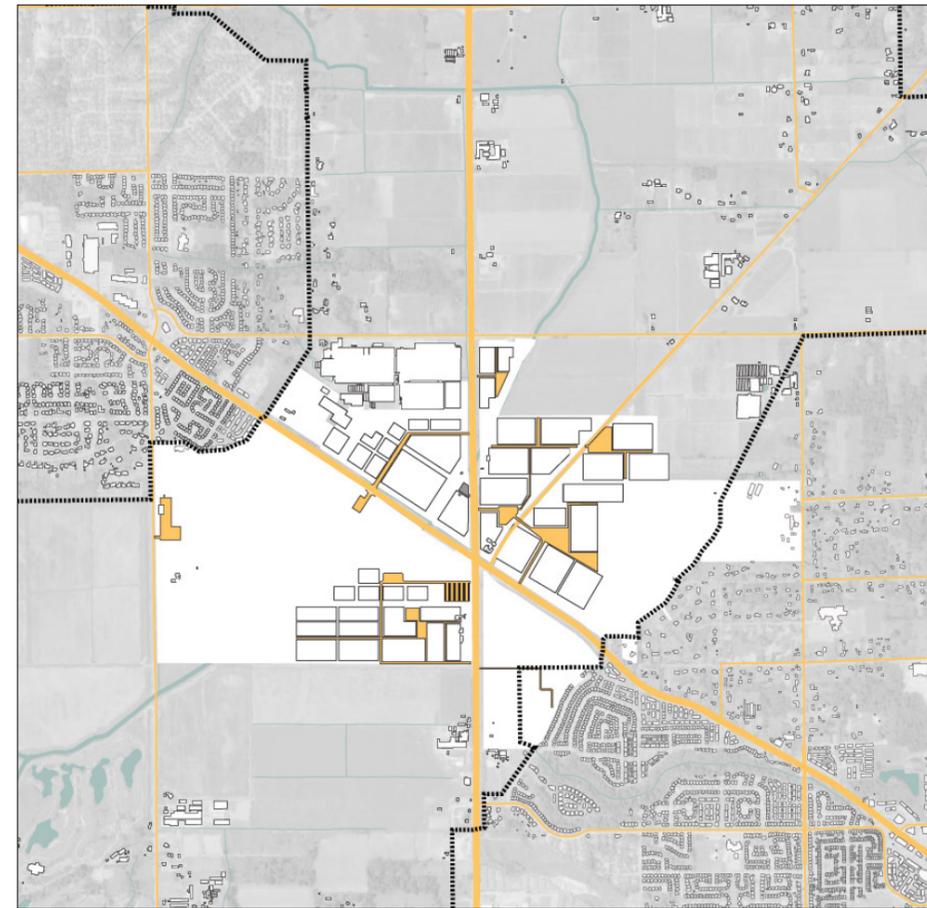
0 2.5km



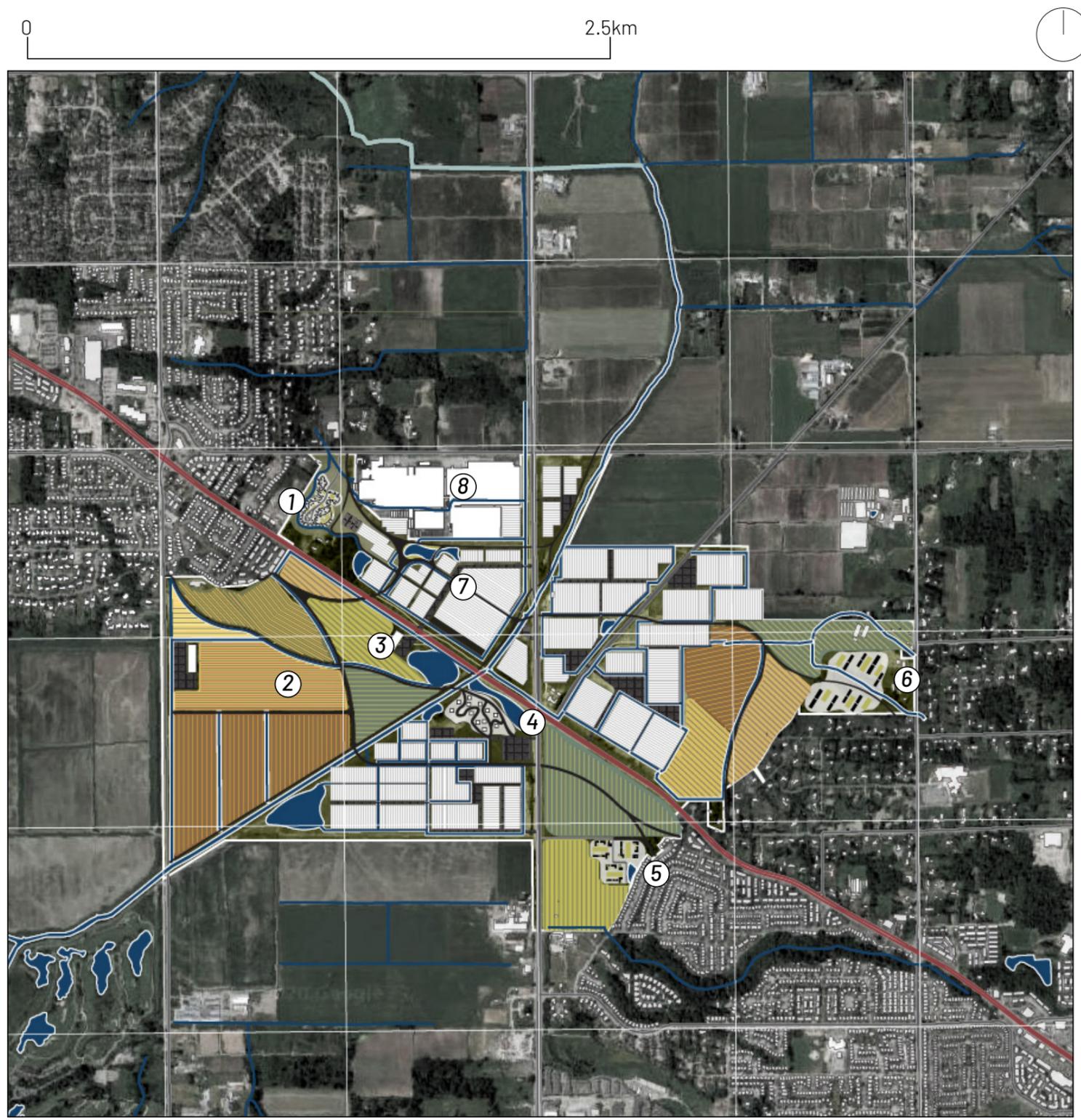
-  Agro-forestry Crops
-  Low-Impact Communities
-  Water Management Network
-  Public Space
-  Greenhouses
-  Infrastructural and Grid Connections

-  Uncultivated Farmland
-  ALR boundary
-  Educational and Religious Facilities
-  Commercial and Office Centres
-  Existing Farms
-  Residential Neighbourhoods

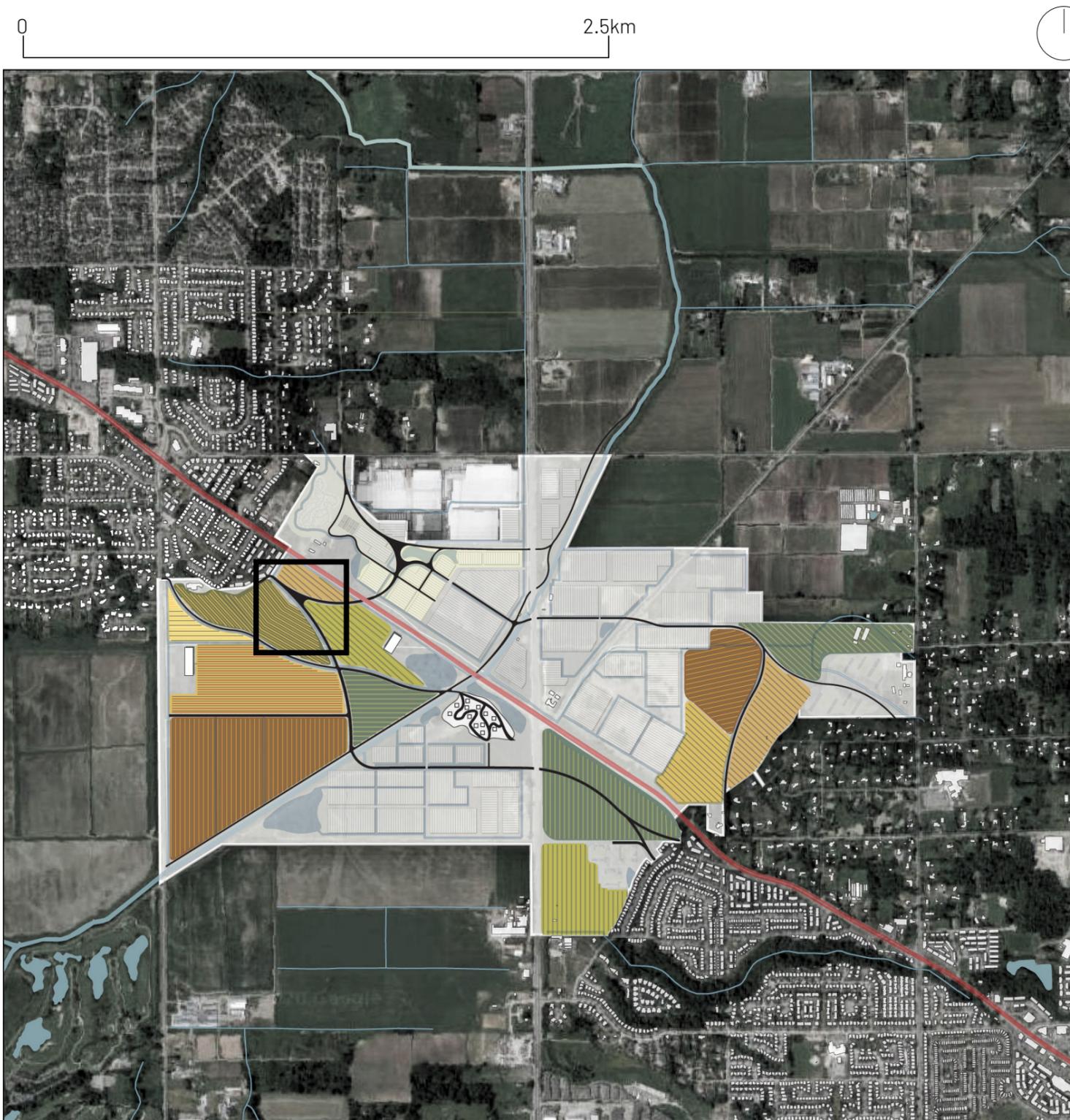
# Productive Centre Logistics Network



# Productive Centre Site Design



- ① LIC - Moveable Tiny Homes
- ② Agro-Forestry Crops
- ③ Logistics Point for harvesting and maintenance
- ④ Public Market Space
- ⑤ LIC - Modular Houses
- ⑥ LIC - Earthships
- ⑦ Greenhouse Hub with Public Realm
- ⑧ Existing Greenhouses



# Productive Centre

## Agro-Forestry Crops

### Food Production Potential

135ha of Agro-Forestry  
 Aprox Yield: 50 ton/ha/yr  
 6,750 tons of produce/year

*\*Recommended vegetable consumption per day by the WHO/FAO is of 400 grams*

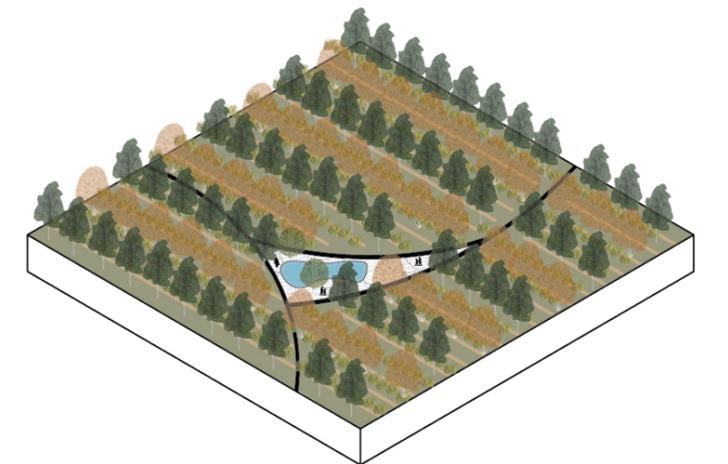
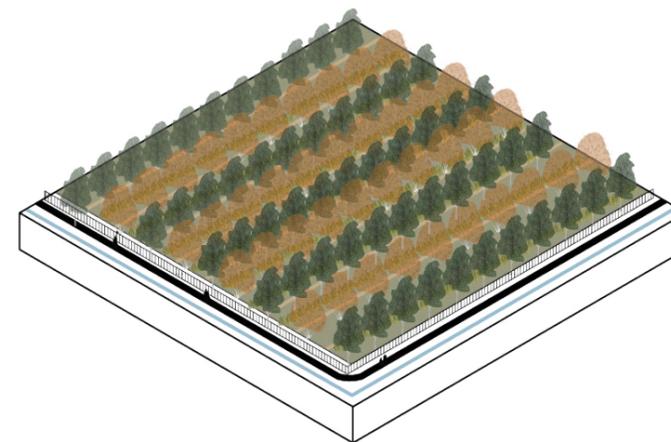
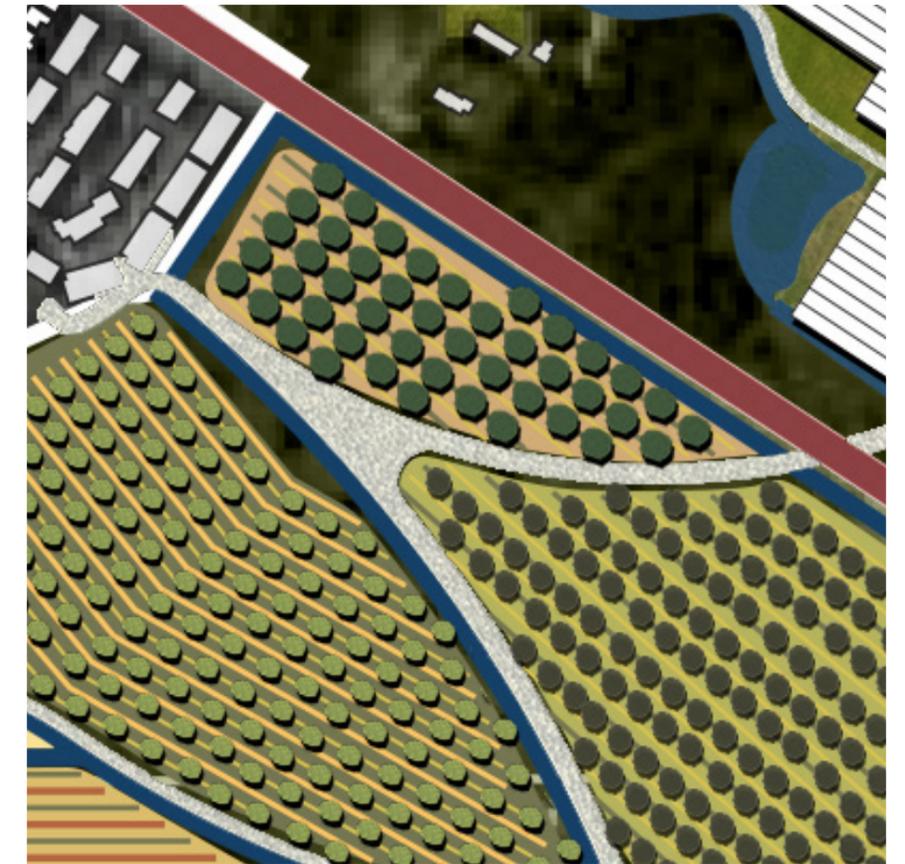
It is possible to feed aproximately 40,000 people per day with this yield

#### Horticulture crops:

- Eggplant
- Peppers
- Zucchini
- Sweet potato
- Squash/pumpkin

#### Field crops:

- Barley
- Oats
- Wheat

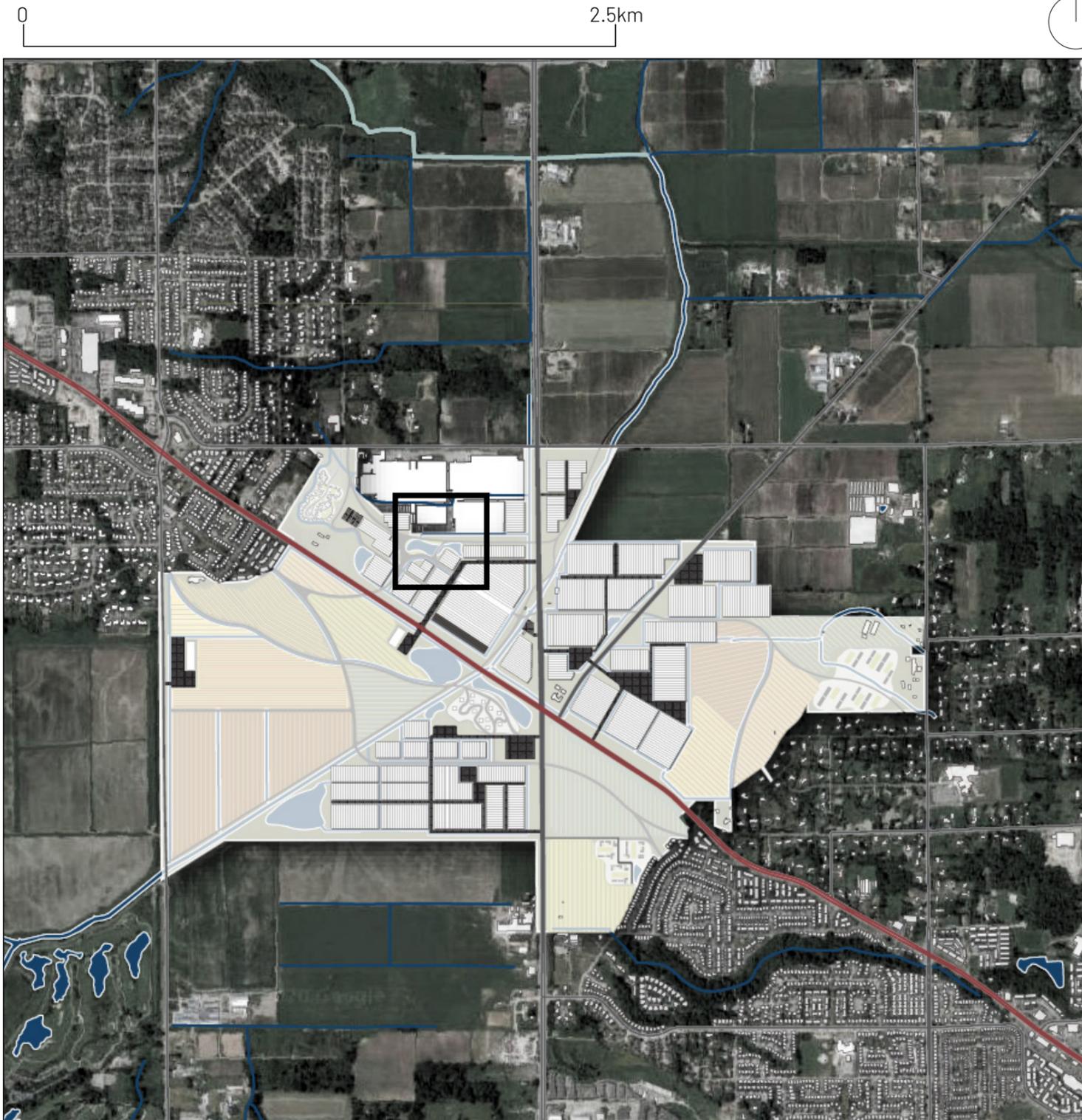


Agroforestry is defined by the Food and Agriculture Organization as "a dynamic, ecologically based, natural resource management system that, through the integration of trees on farms and in the agricultural landscape, diversifies and sustains production for increased social, economic and environmental benefits for land users at all levels.

# Productive Centre

Agro-Forestry Crops





# Productive Centre Greenhouse Hub

## Food Production Potential

82ha of Greenhouses

Aprox Yield: 200 ton/ha/yr

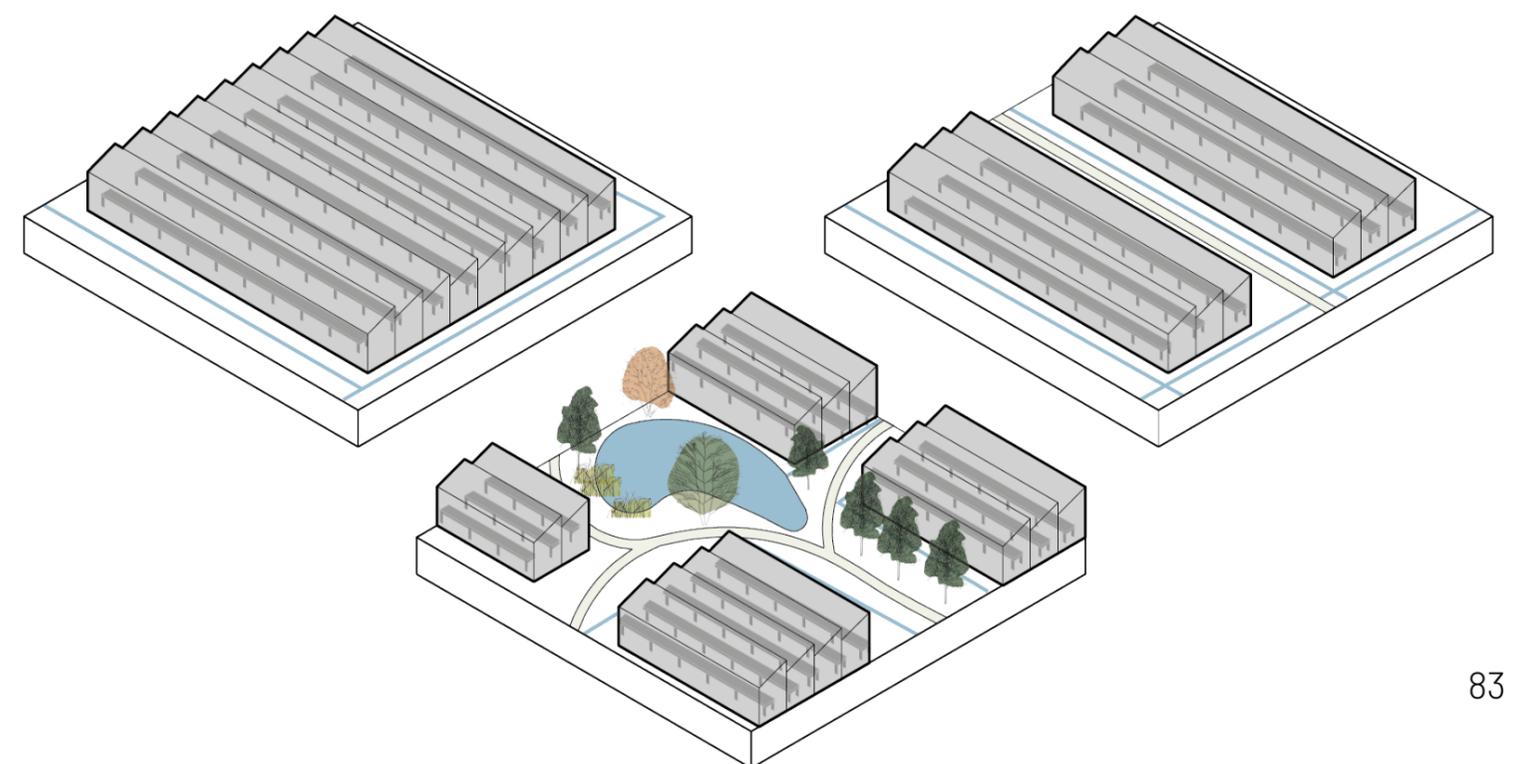
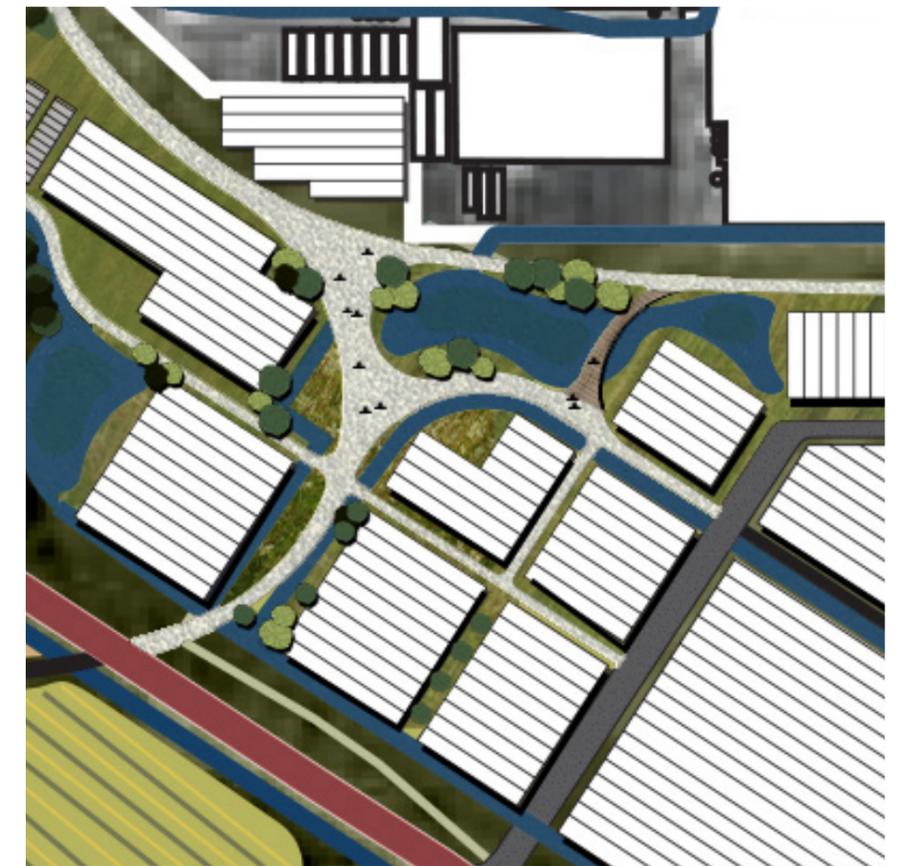
16,400 tons of produce/year

*\*Recommended vegetable consumption per day by the WHO/FAO is of 400 grams*

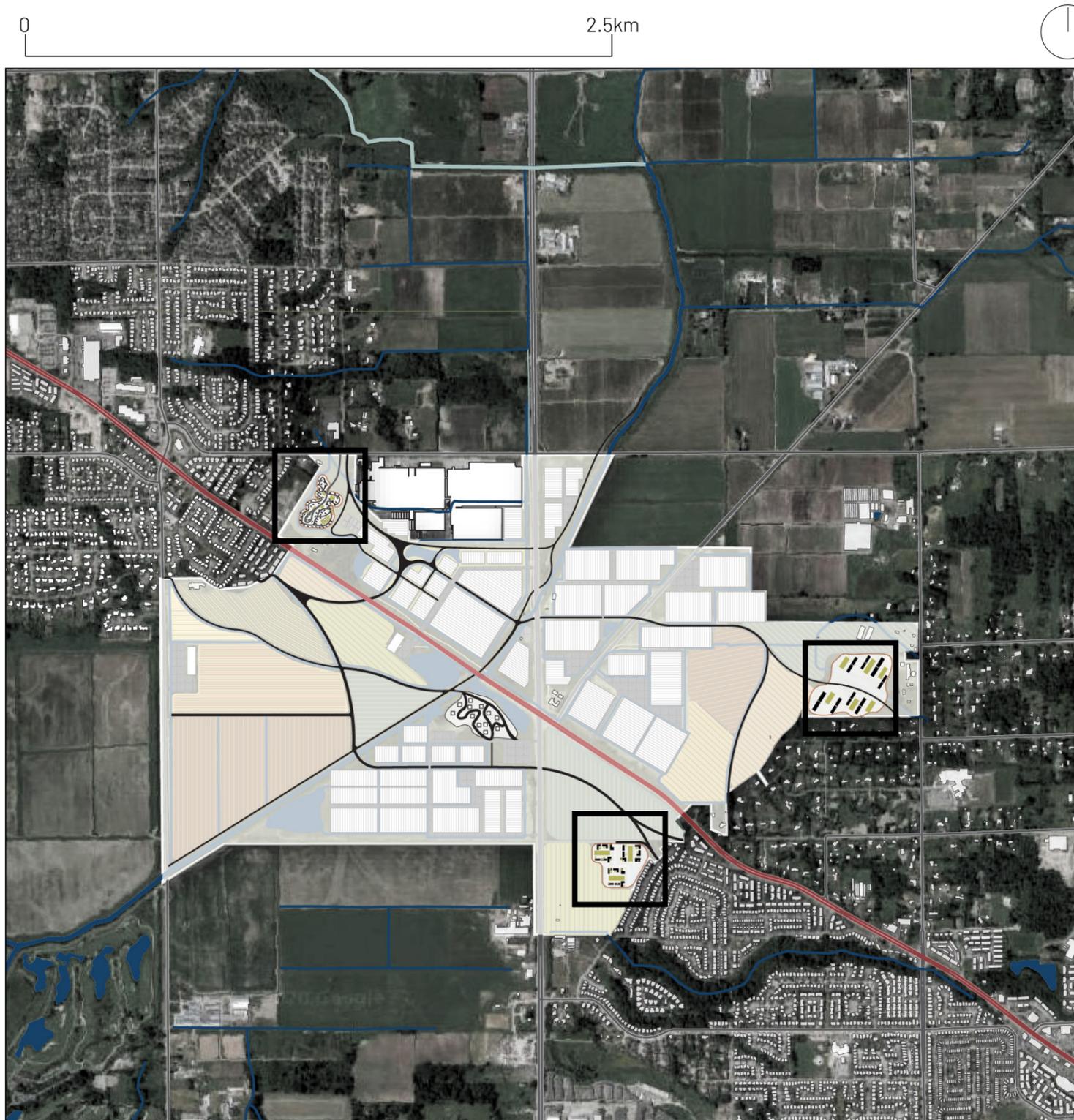
It is possible to feed approximately 97,000 people per day with this yield

### Food Grown:

- Tomatoes
- Strawberries
- Raspberries
- Greens (kale, lettuce, arugula etc.)
- Sprouts







# Productive Centre

## Low-Impact Communities

### Dwelling Potential

- Space for **65-100** tiny homes
- Space for **18-50** modular homes
- Space for **16-20** earthships

**Total:** 170 new low-impact community households

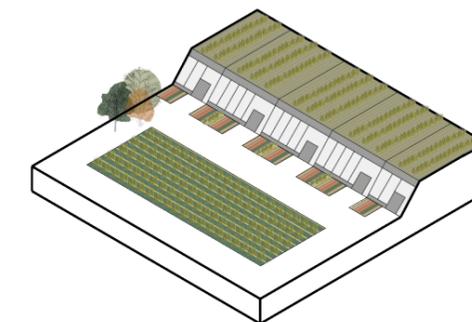
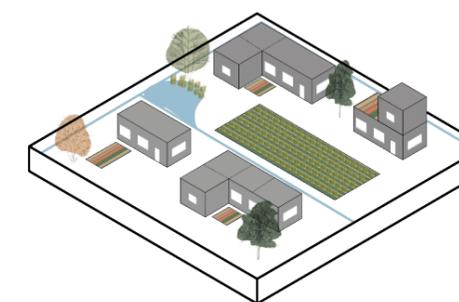
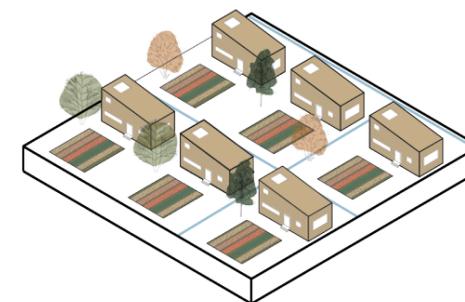
*Tiny Homes*

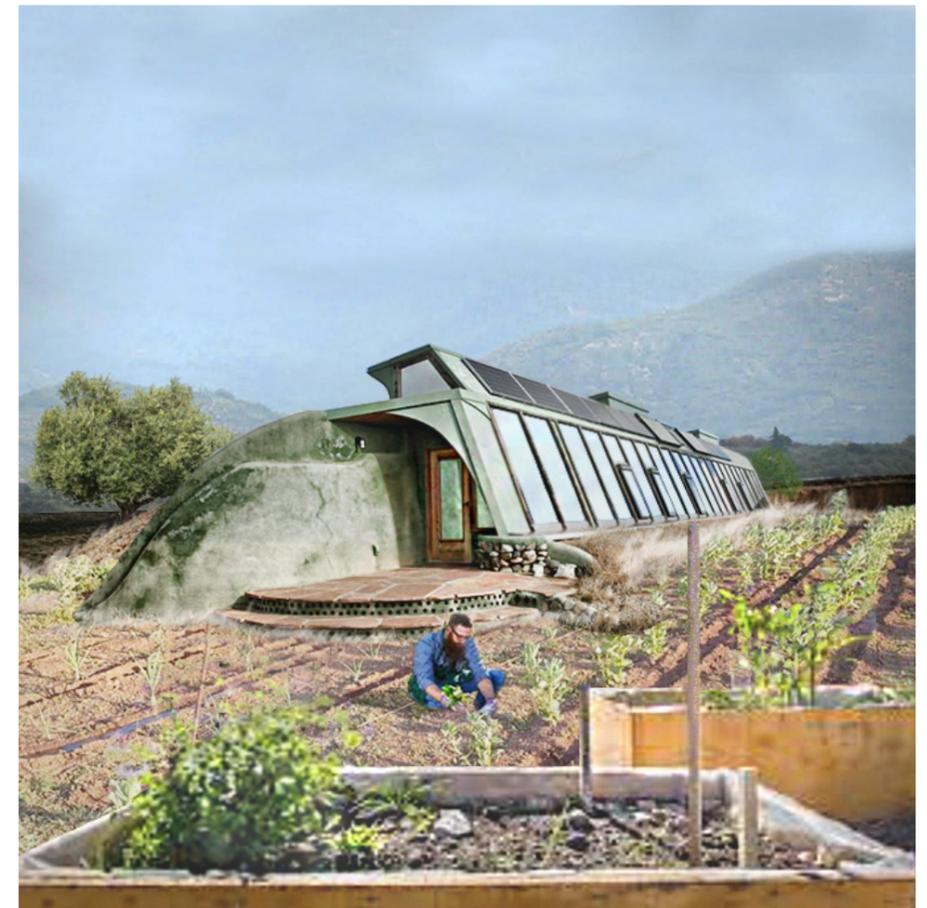


*Modular Houses*



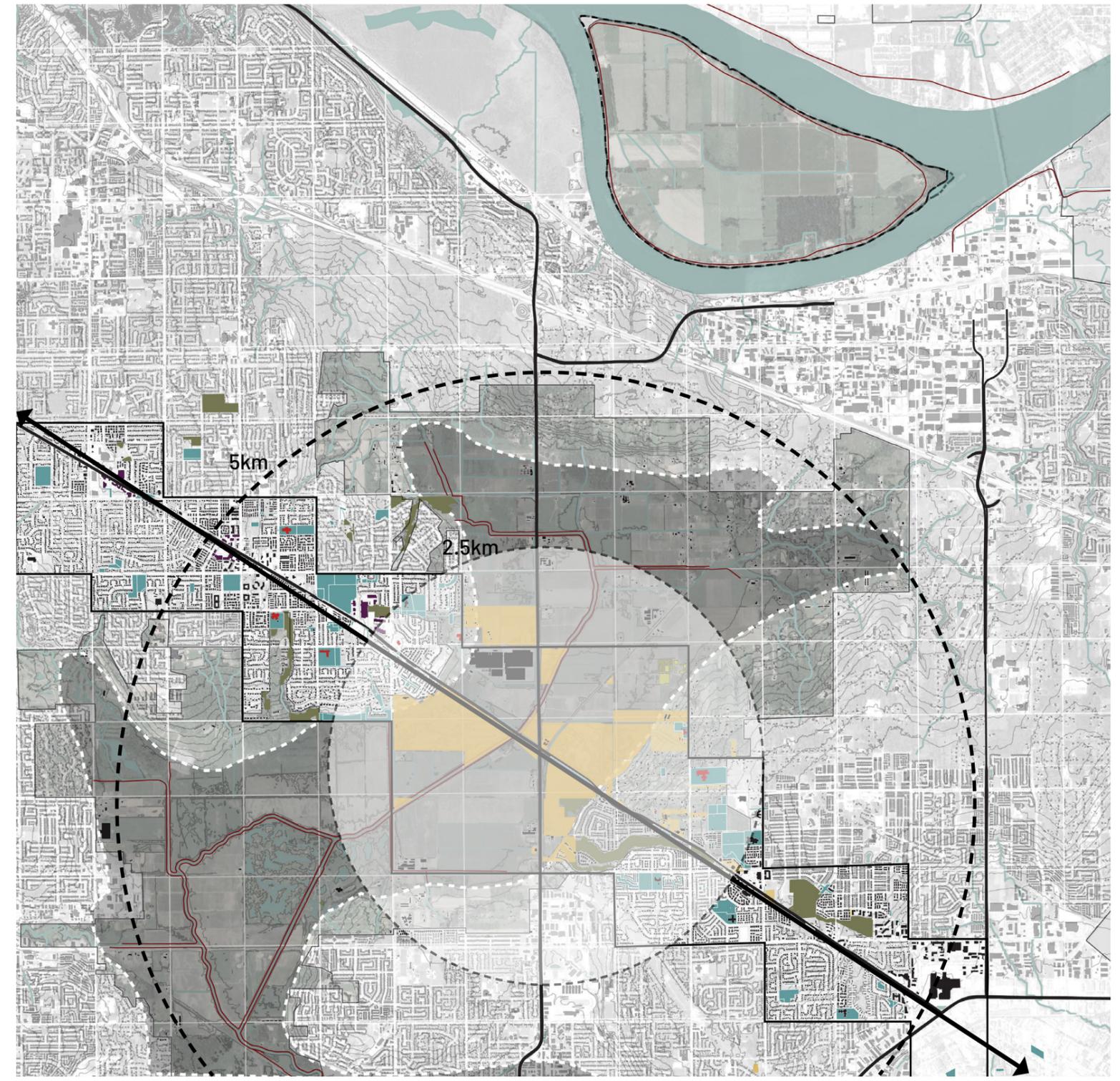
*Earthships*





# Fraser Corridor

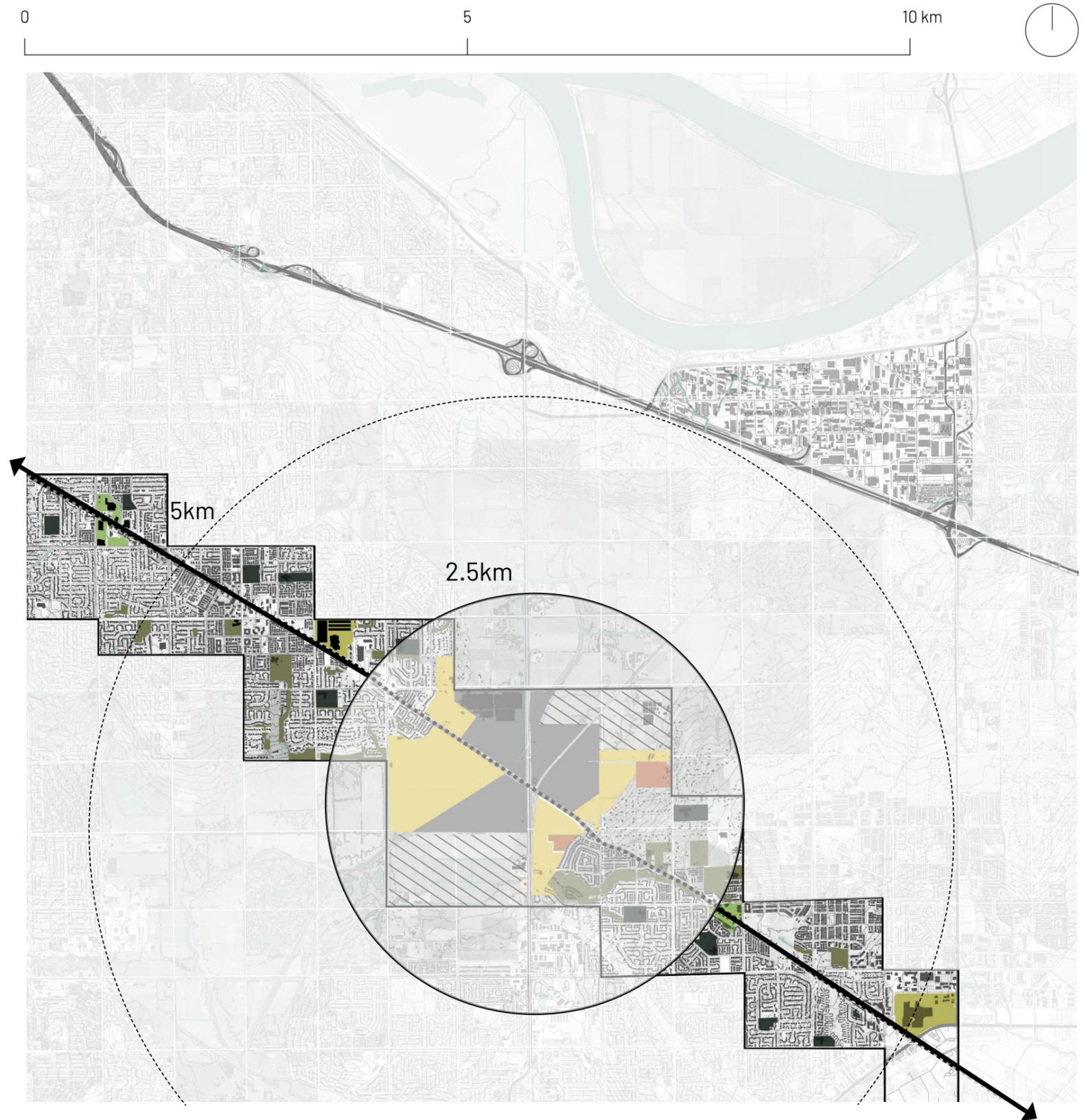
Step #2 : *Disperse*  
Extend the Corridor



- Not used for Farming
- Municipal Property
- Existing Farms
- River Dike
- Natural Areas
- Primary Roads
- Commercial Centres
- Institutional Buildings
- Flood Zone

# Productive Centre

## Proposed Functions



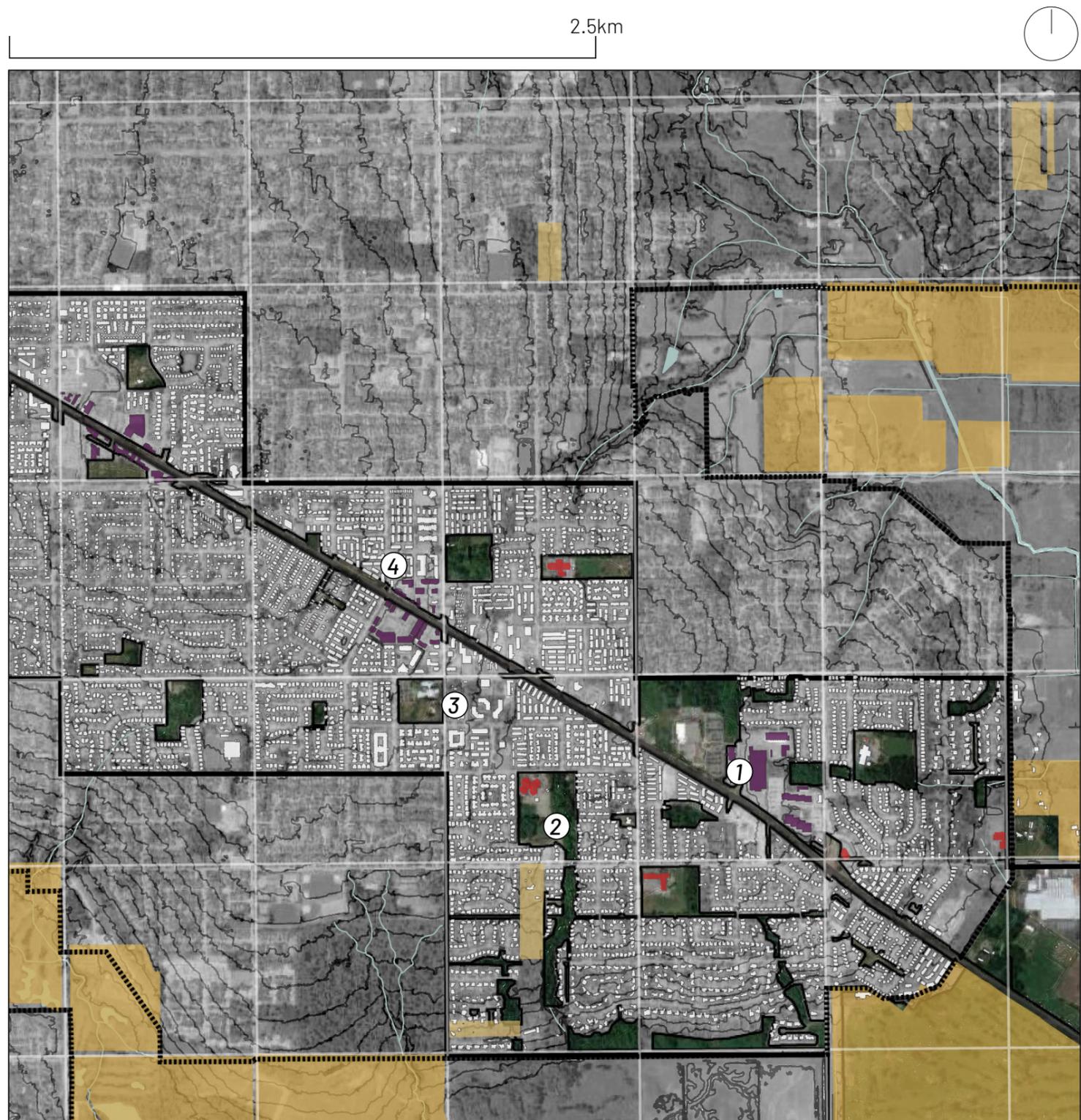
- Urban Agri-tech Hub
- Food Forest
- Community Gardens
- Community Food Hub
- Agro-forestry Crops
- Low-Impact Communities
- Greenhouse Production
- Existing Active Farms

# Fraser Corridor

*Proposed Functions*



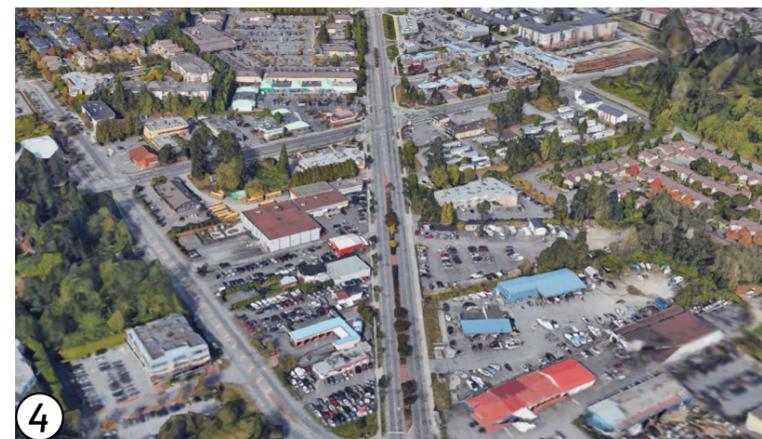
- Food Forest
- Community Gardens
- Agro-forestry Crops
- Low-Impact Communities
- Greenhouse Production
- Existing Active Farms

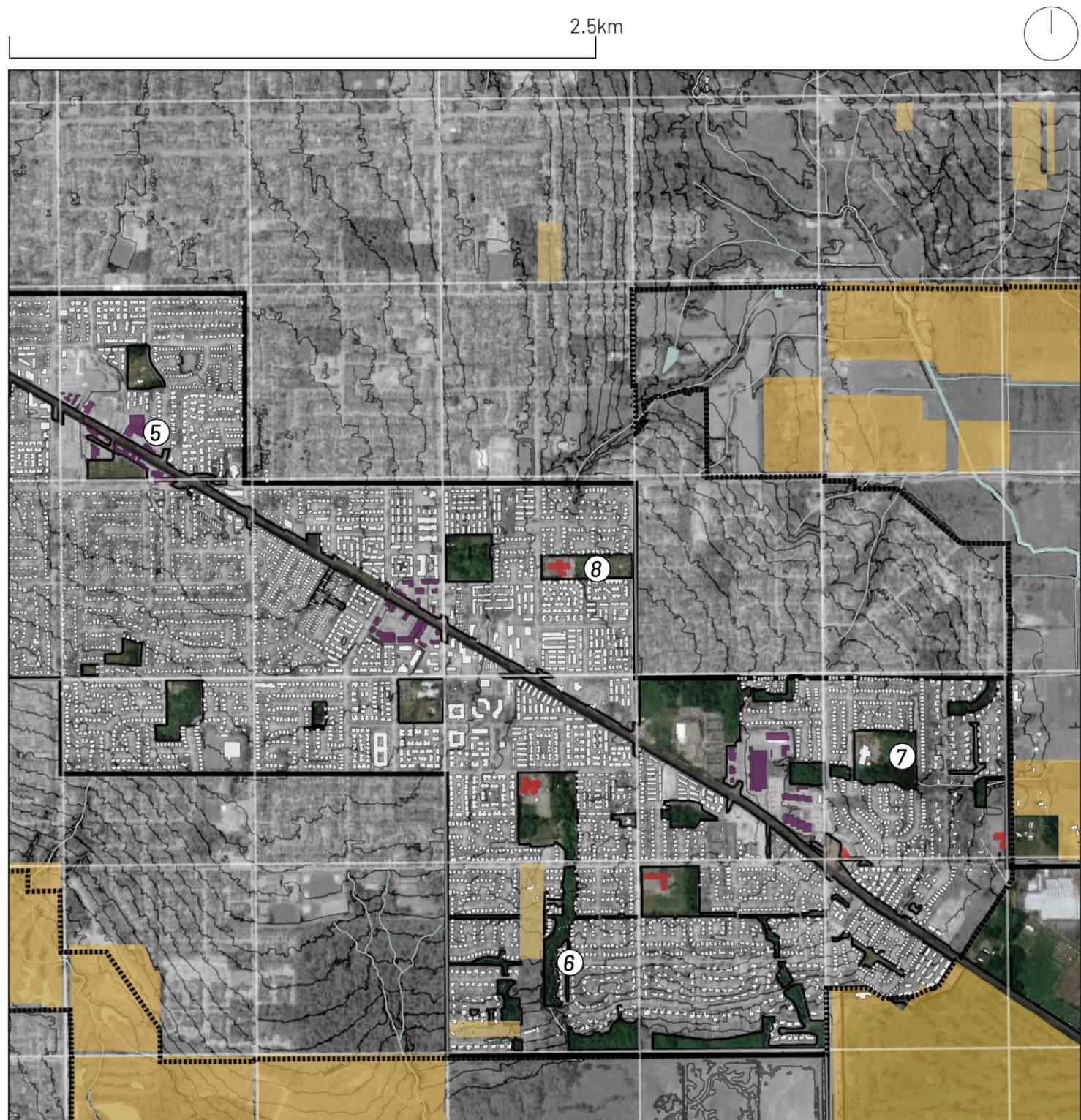


- ① Surrey Sport & Leisure Complex
- ② Walnut Road Elementary School
- ③ Surrey Libraries - Fleetwood Branch
- ④ Commercial Centre

- Uncultivated Farmland
- ALR boundary
- Educational and Religious Facilities
- Commercial and Office Centres
- Existing Farms
- Residential Neighbourhoods

## Corridor Existing Spatial Quality

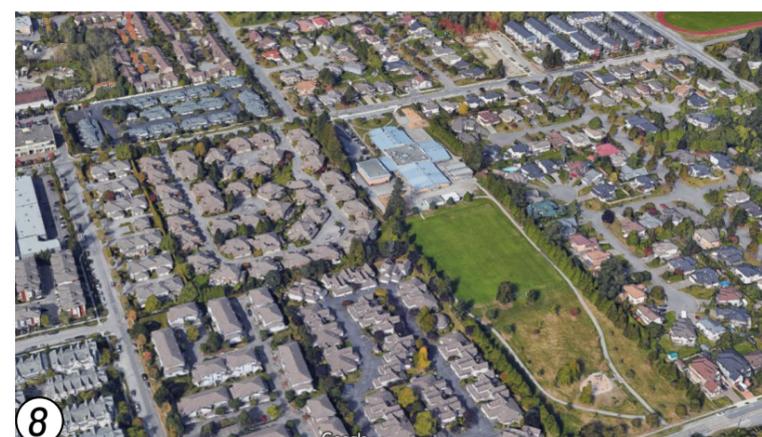
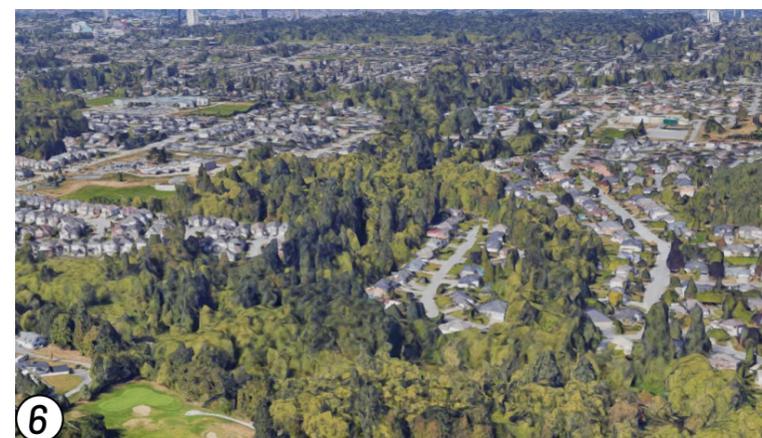




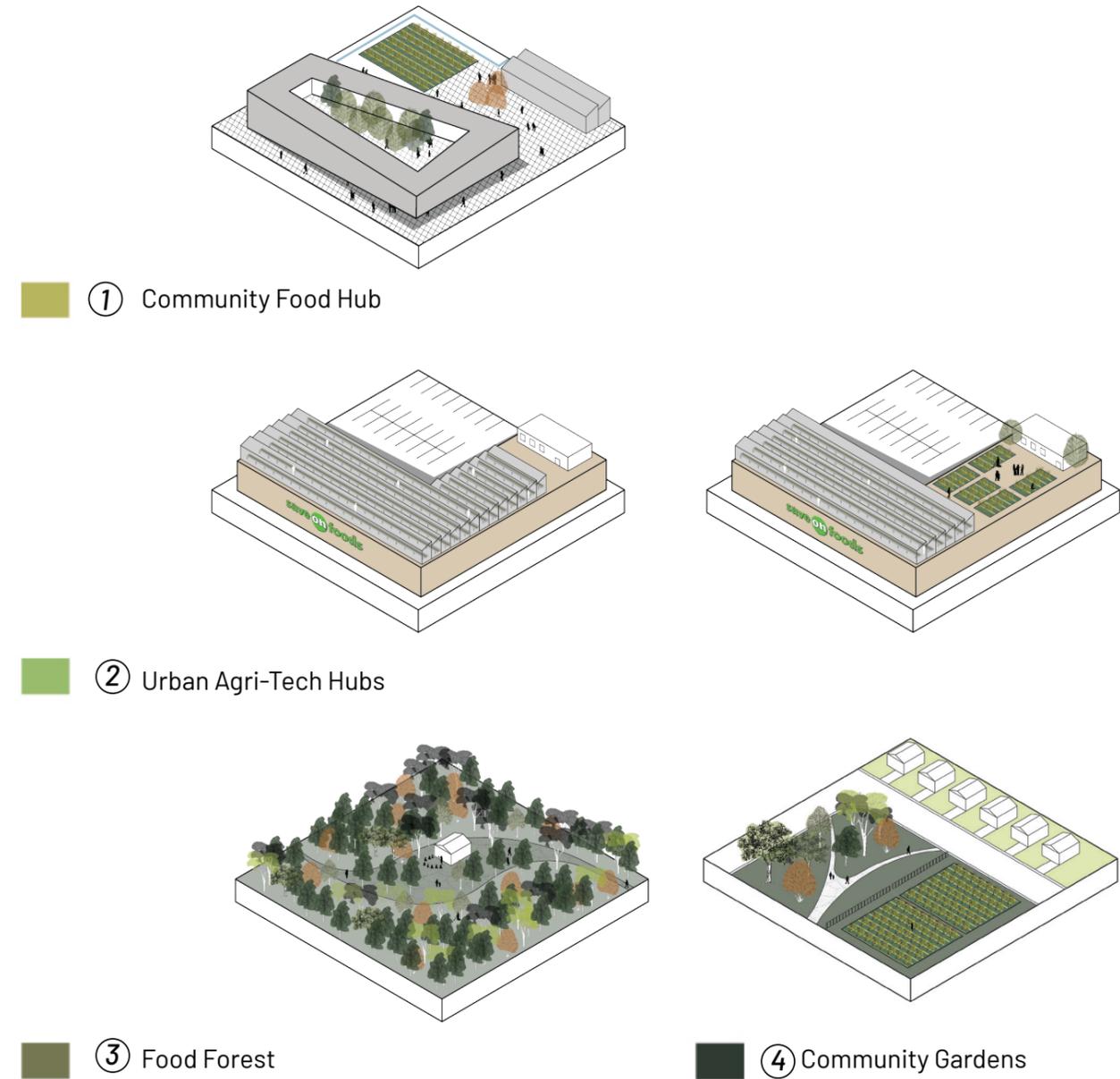
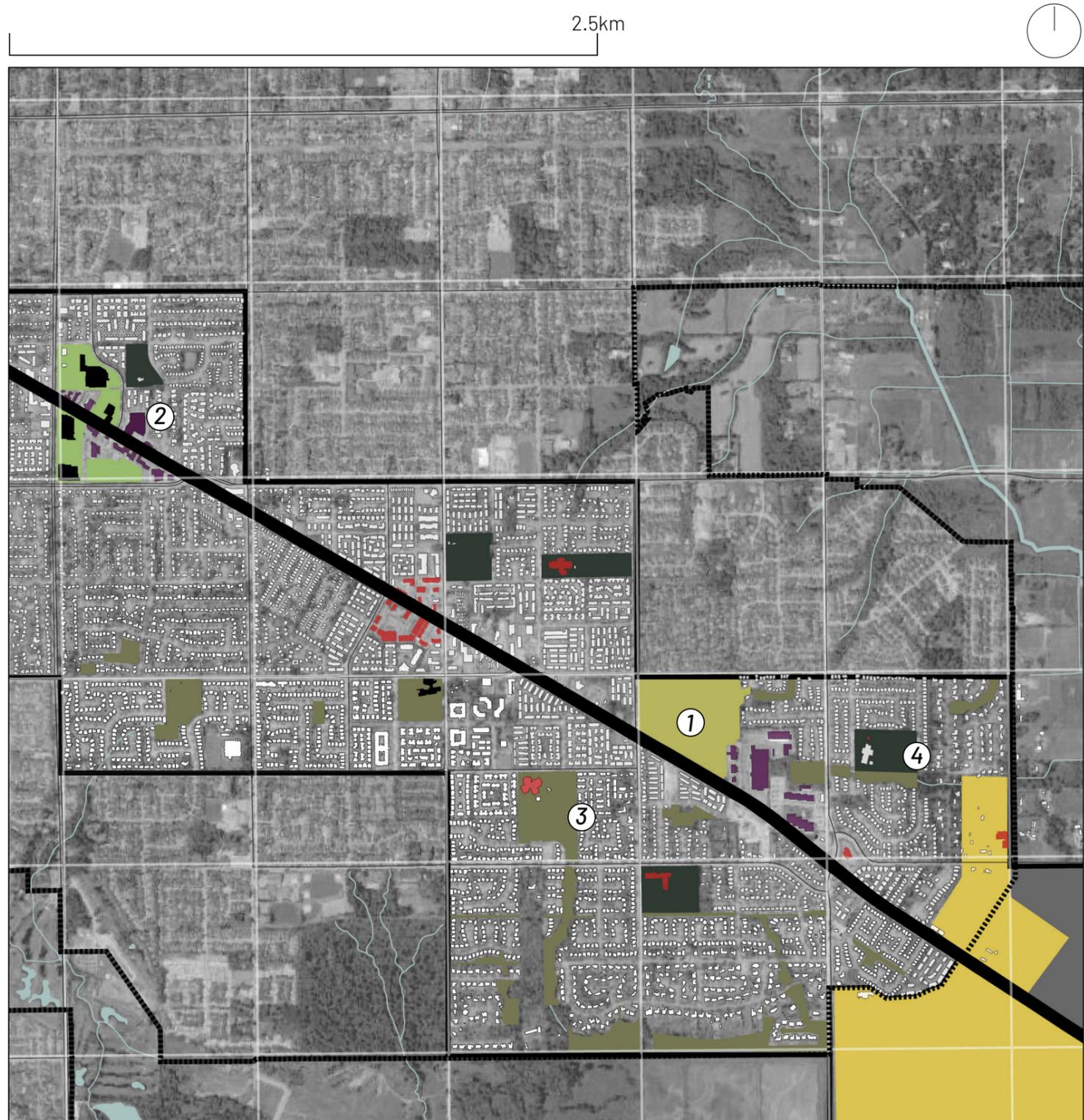
- ⑤ Commercial Centre
- ⑥ Existing Forest
- ⑦ Coast Meridian Park
- ⑧ Frost Road Elementary School

- Uncultivated Farmland
- ALR boundary
- Educational and Religious Facilities
- Commercial and Office Centres
- Existing Farms
- Residential Neighbourhoods

## Corridor Existing Spatial Quality



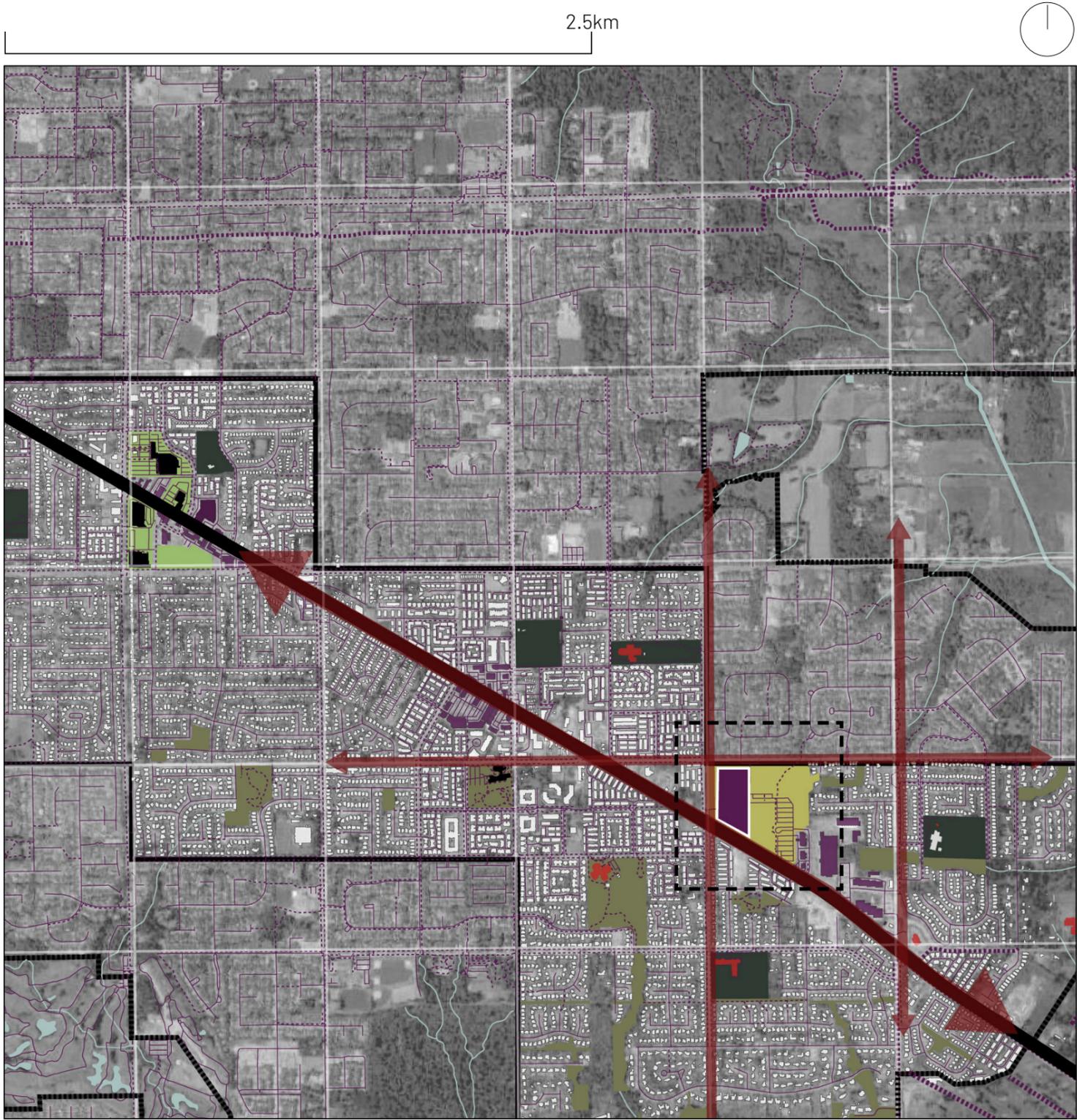
# Corridor Strategic Interventions



- Urban Agri-tech Hub
- Educational and Religious Facilities
- Food Forest
- Commercial and Office Centres
- Community Gardens
- Existing Farms
- Residential Neighbourhoods
- Community Food Hub

# Corridor

Strengthening and Expanding the Network



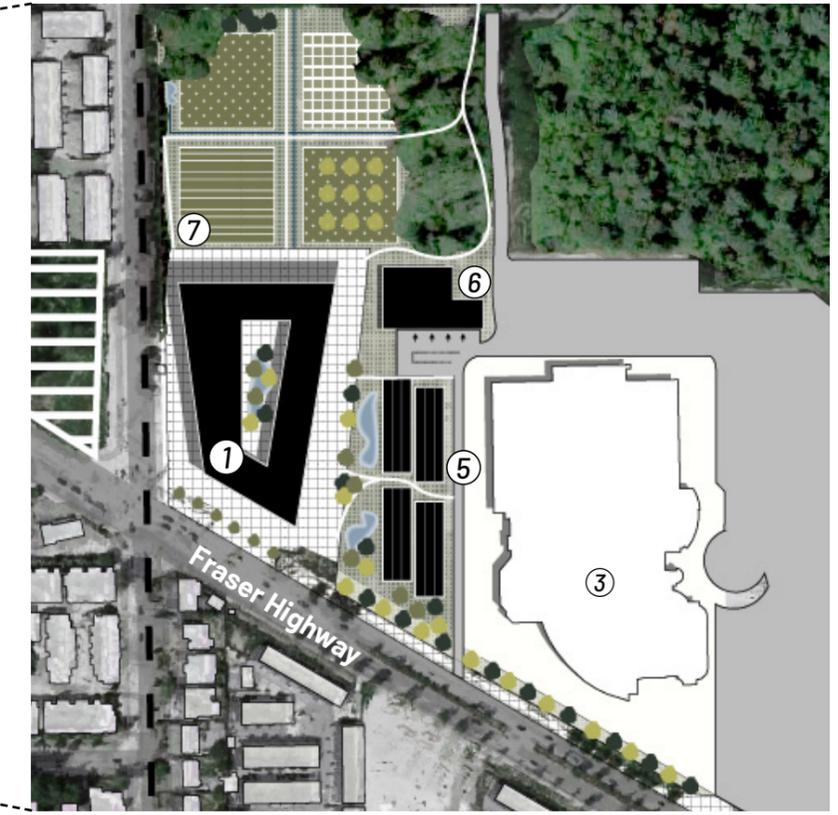
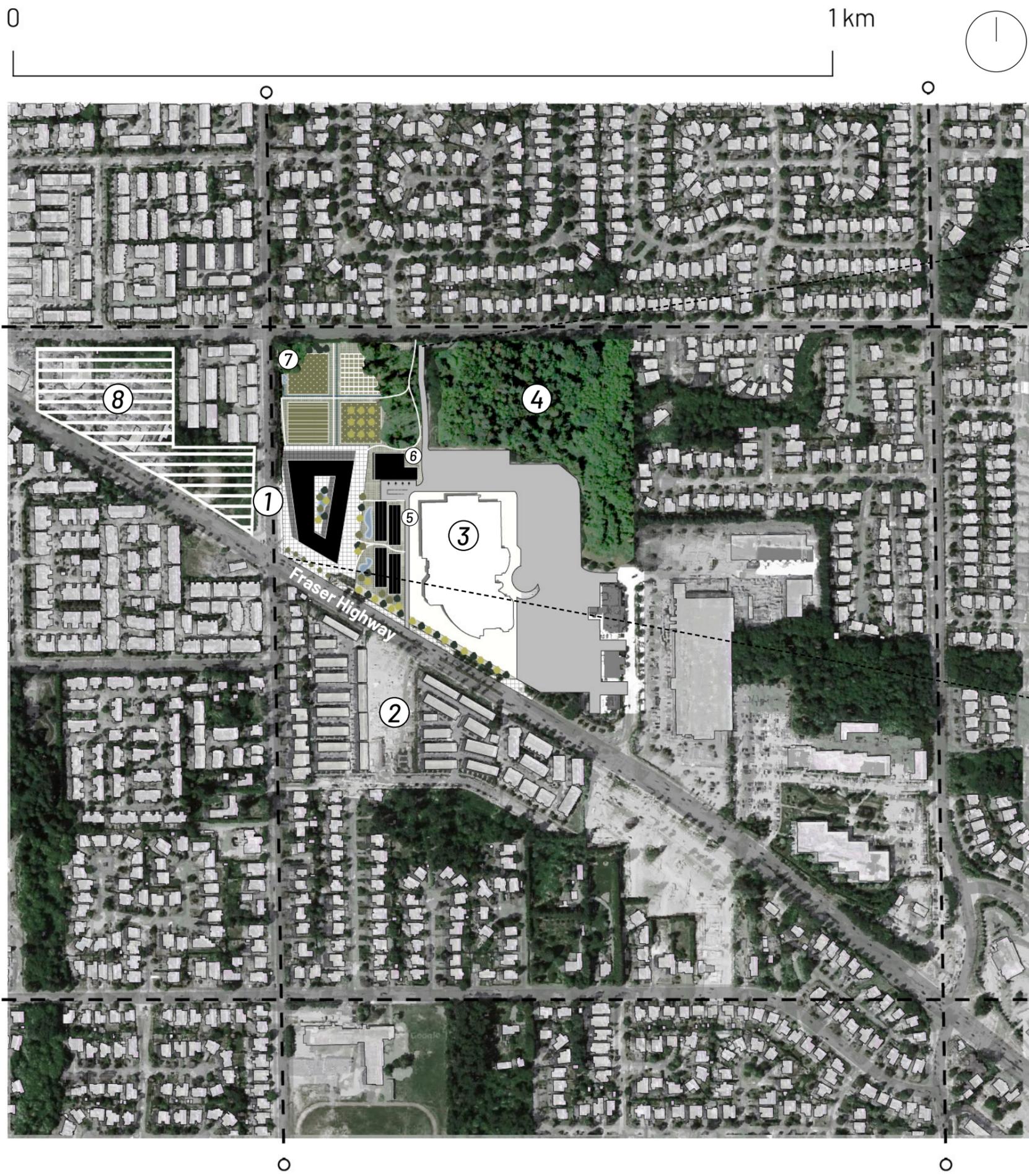
- Urban Agri-tech Hub
- Food Forest
- Community Gardens
- Community Food Hub
- Public Space
- Infrastructural and Grid Connections
- Educational and Religious Facilities
- Commercial and Office Centres
- Existing Farms
- Residential Neighbourhoods

Site  
Community Food Hub



# Community Food Hub

## Design Proposal



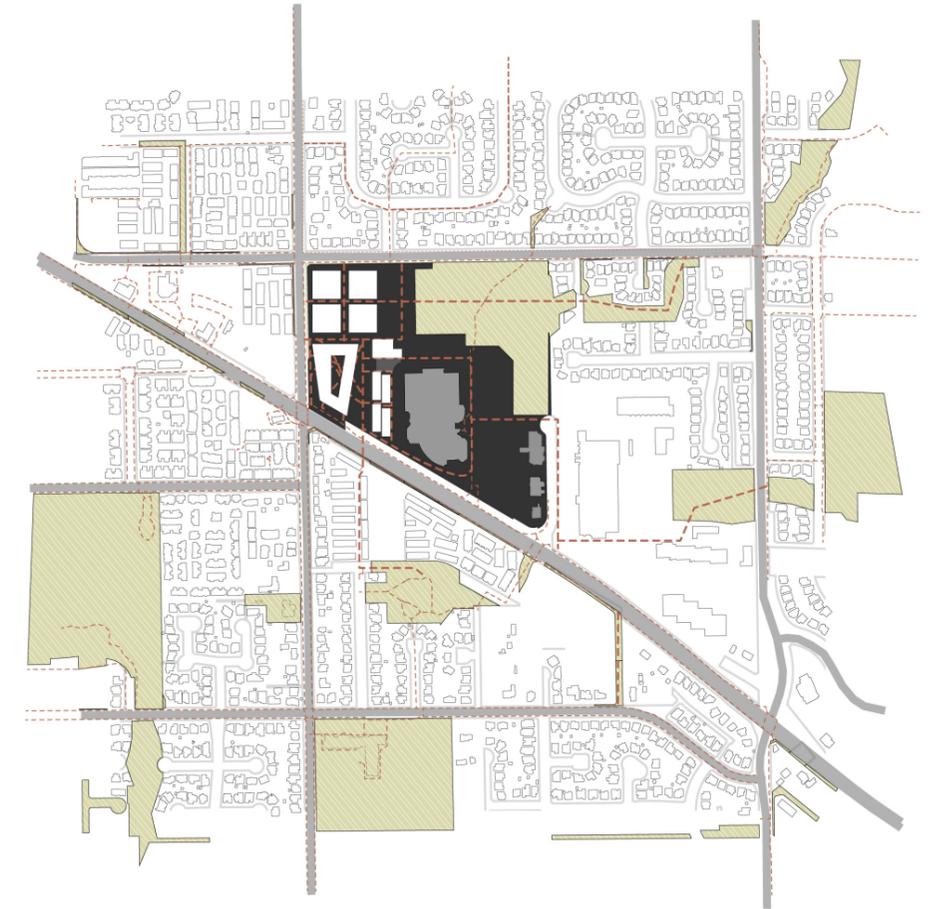
- ① Community Food Hub - Education and Innovation Centre
- ② Currently under development
- ③ Surrey Sport & Leisure Complex
- ④ Bonnie Schrenk Park
- ⑤ Greenhouses
- ⑥ Processing and Distribution Centre
- ⑦ Crop Testing Fields
- ⑧ Potential for greater density

0

1 km



# Community Food Hub Pedestrian Network



-  Existing Greenspace
-  Primary Roads
-  Cycle Lane
-  Existing Footpaths
-  Proposed Footpaths

0

1 km

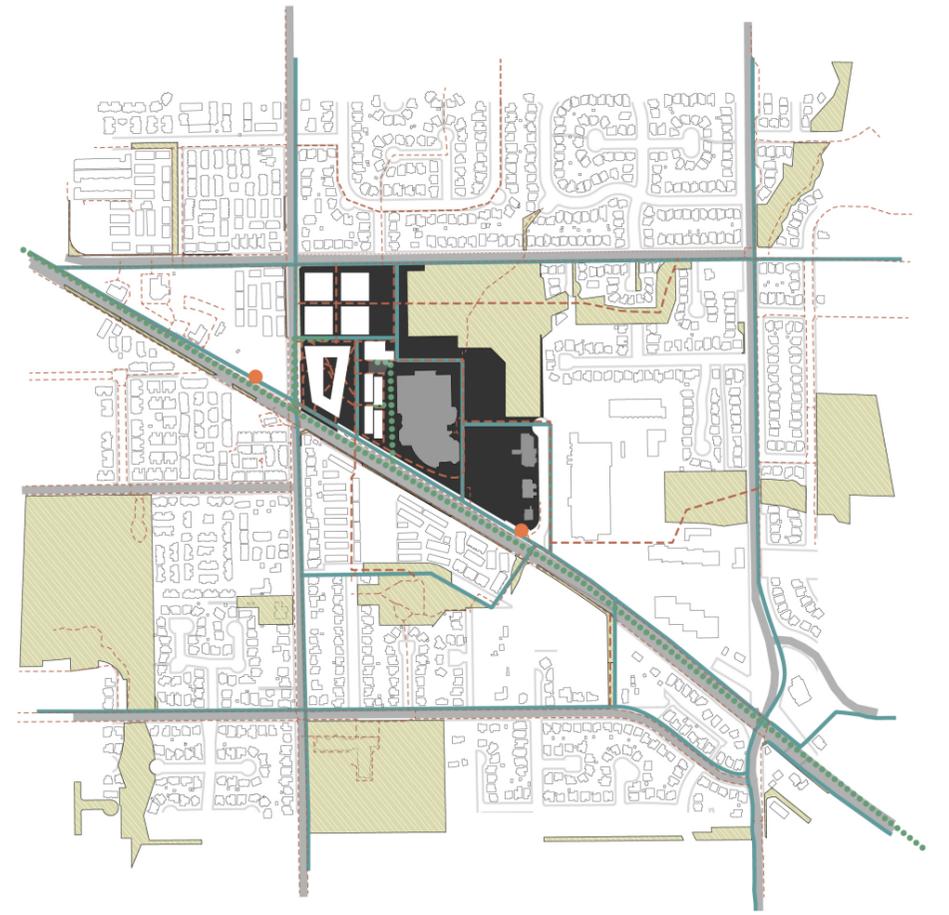


# Community Food Hub Cycle Network



-  Existing Greenspace
-  Primary Roads
-  Cycle Lane

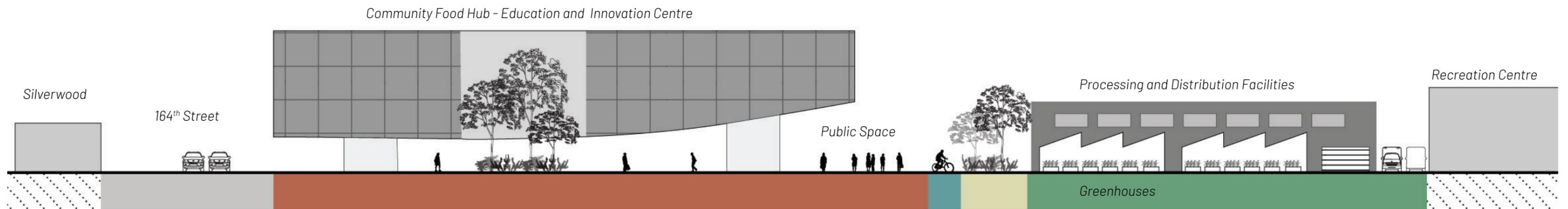
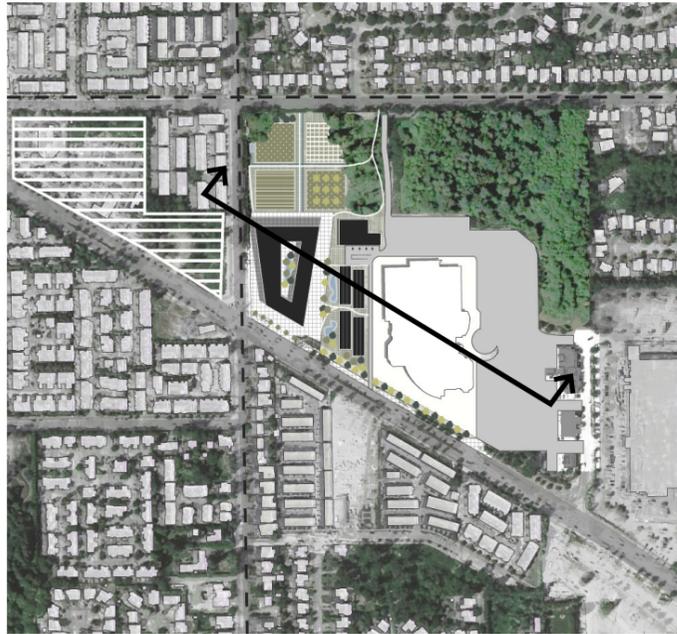
# Community Food Hub Logistics Network



- Existing Greenspace
- Primary Roads
- Logistics Network
- Transit Stops

# Community Food Hub

## Site Functions

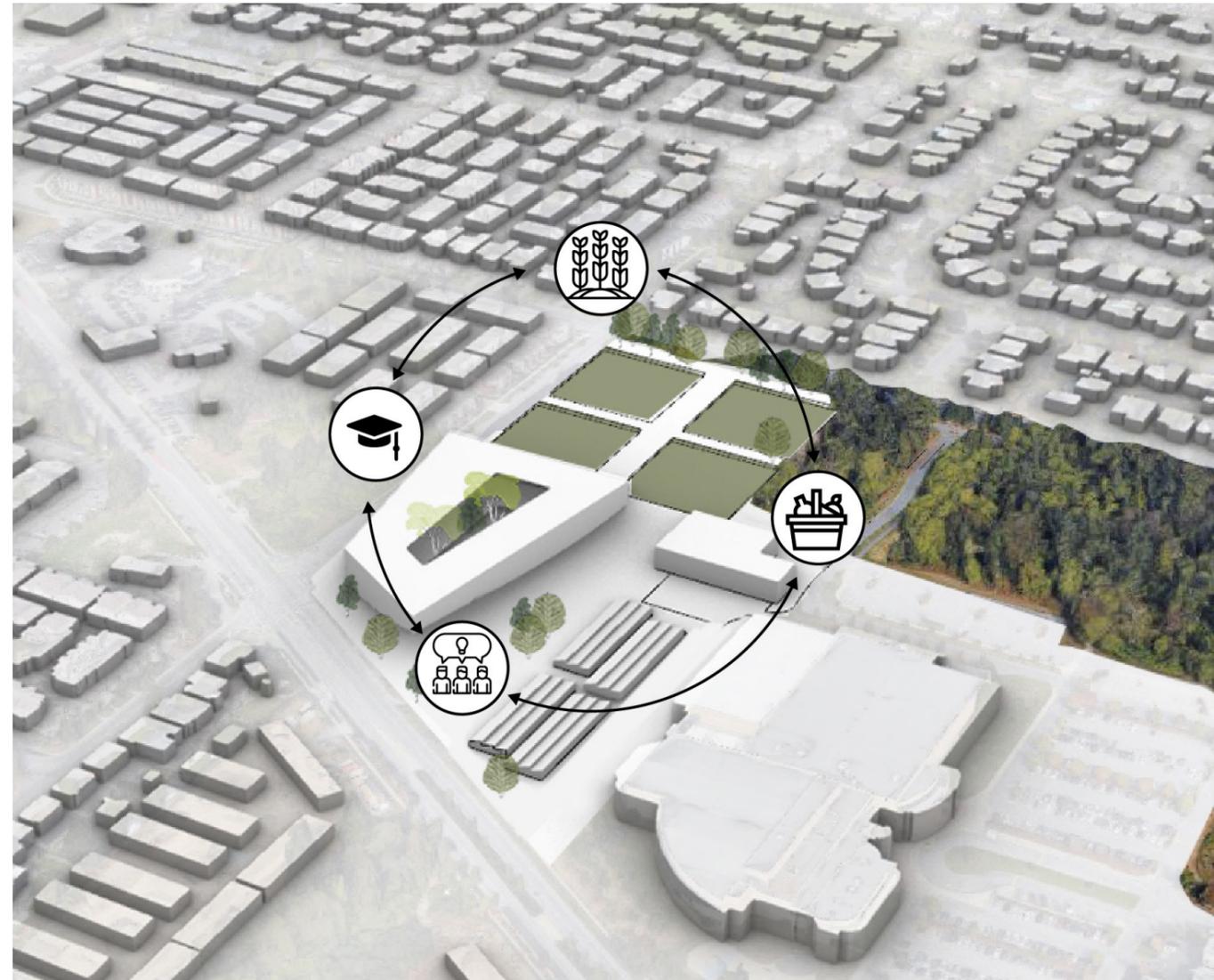


- Food Hub and Public Space
- Food Production, Processing and Distribution
- Cycleway Path
- Green Spaces
- Existing Community Spaces



# Community Food Hub

## Food Production as Catalyst



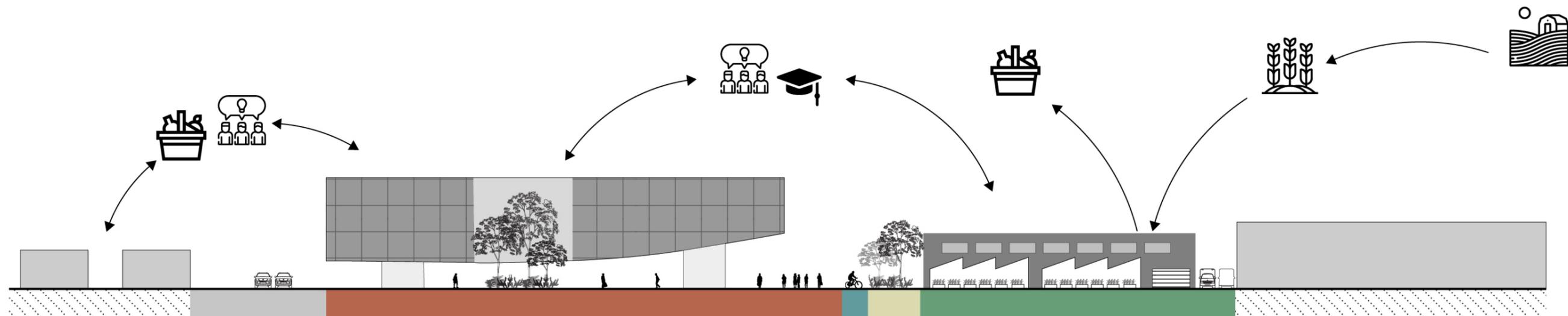
- 

Space for collaboration between farmers, researchers and citizens
- 

Educational facilities for the University of the Fraser Valley
- 

Space for crop production
- 

Processing and Distribution facilities





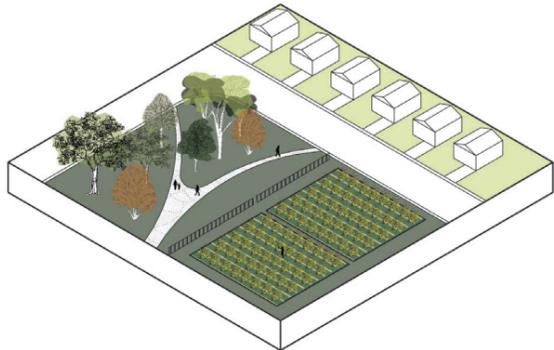
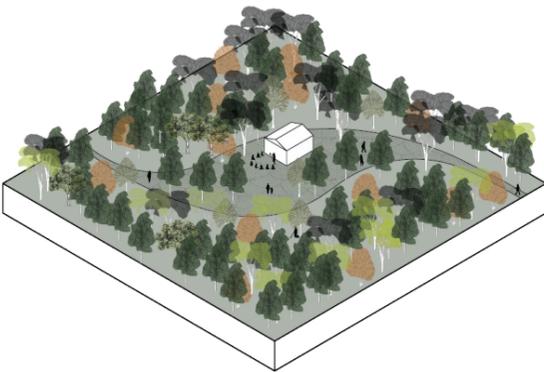
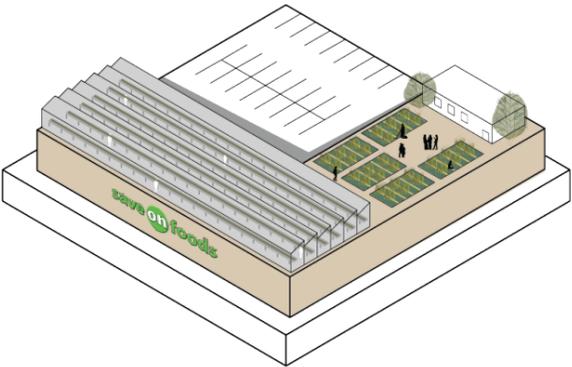
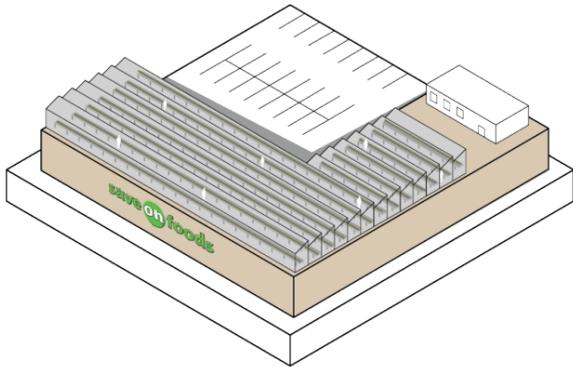
# Completing the Corridor

*Additional Agricultural Typologies*

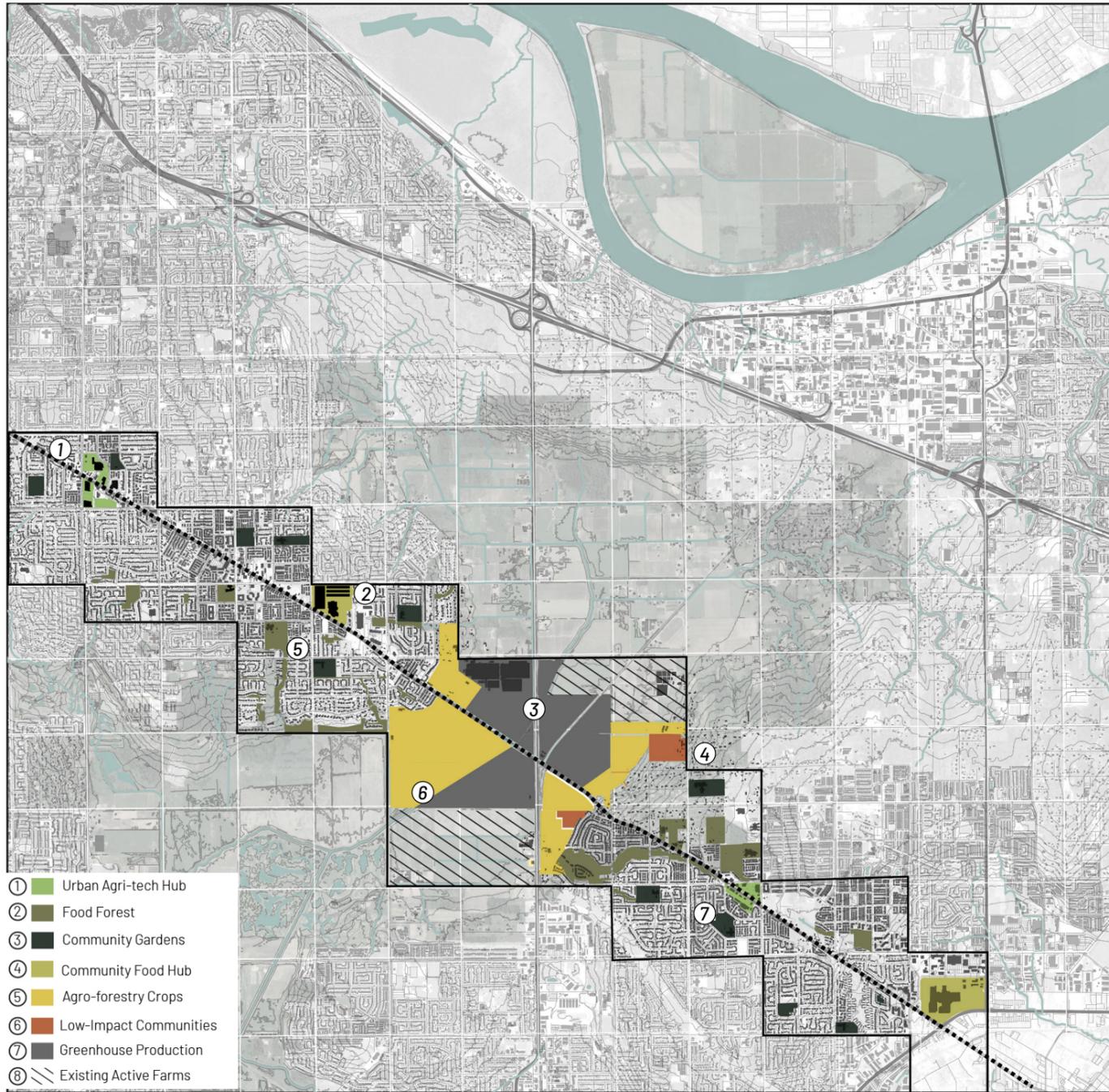
Urban Agri-Tech Hubs



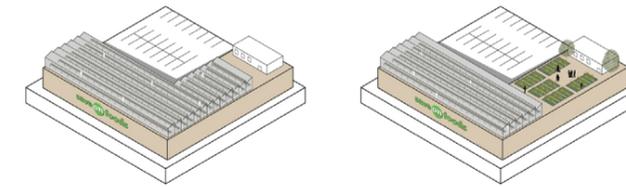
Food Forests and Community Gardens



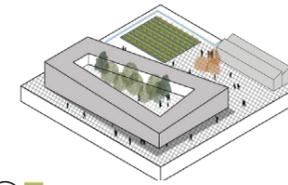
0 5 10 km



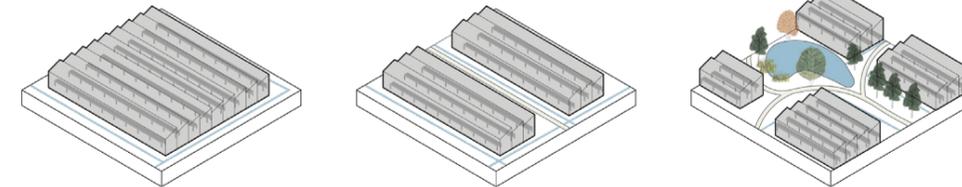
# Completing the Corridor



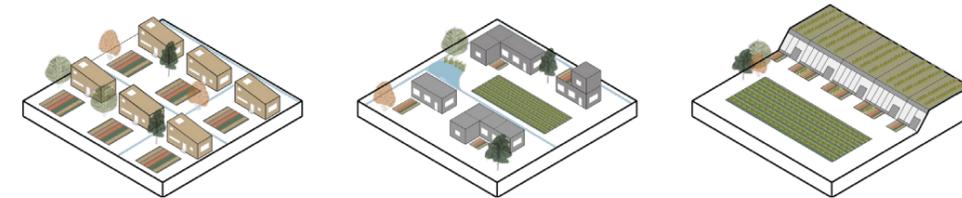
① Urban Agri-tech Hub



② Community Food Hub



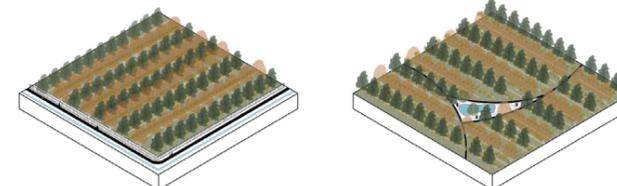
③ Greenhouse Production



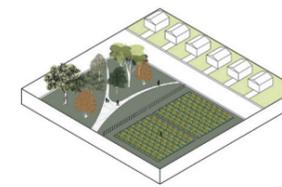
④ Low-Impact Communities



⑤ Food Forest

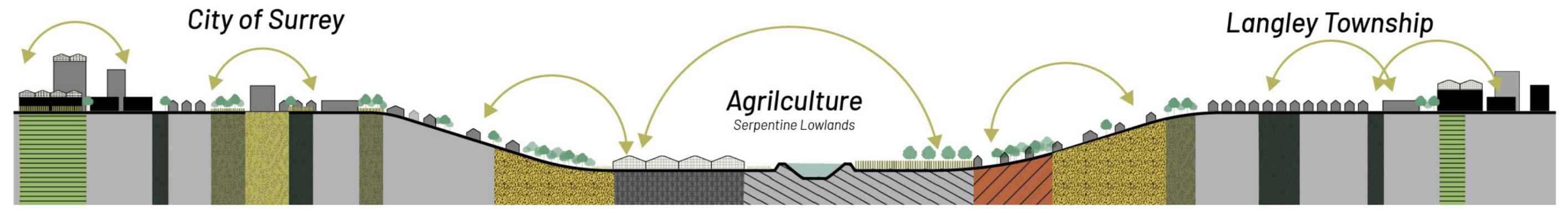
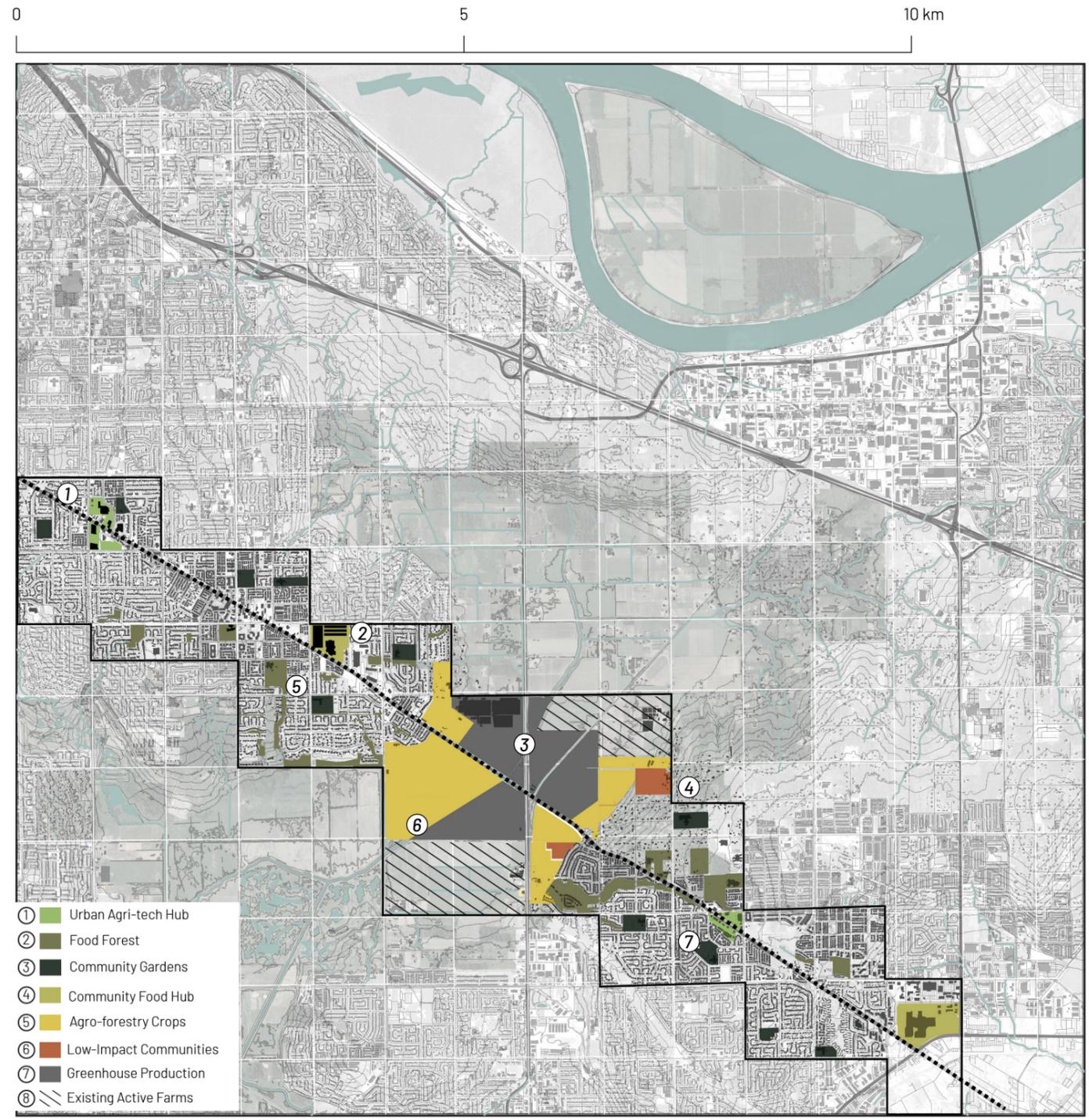


⑥ Agro-forestry Crops



⑦ Community Gardens

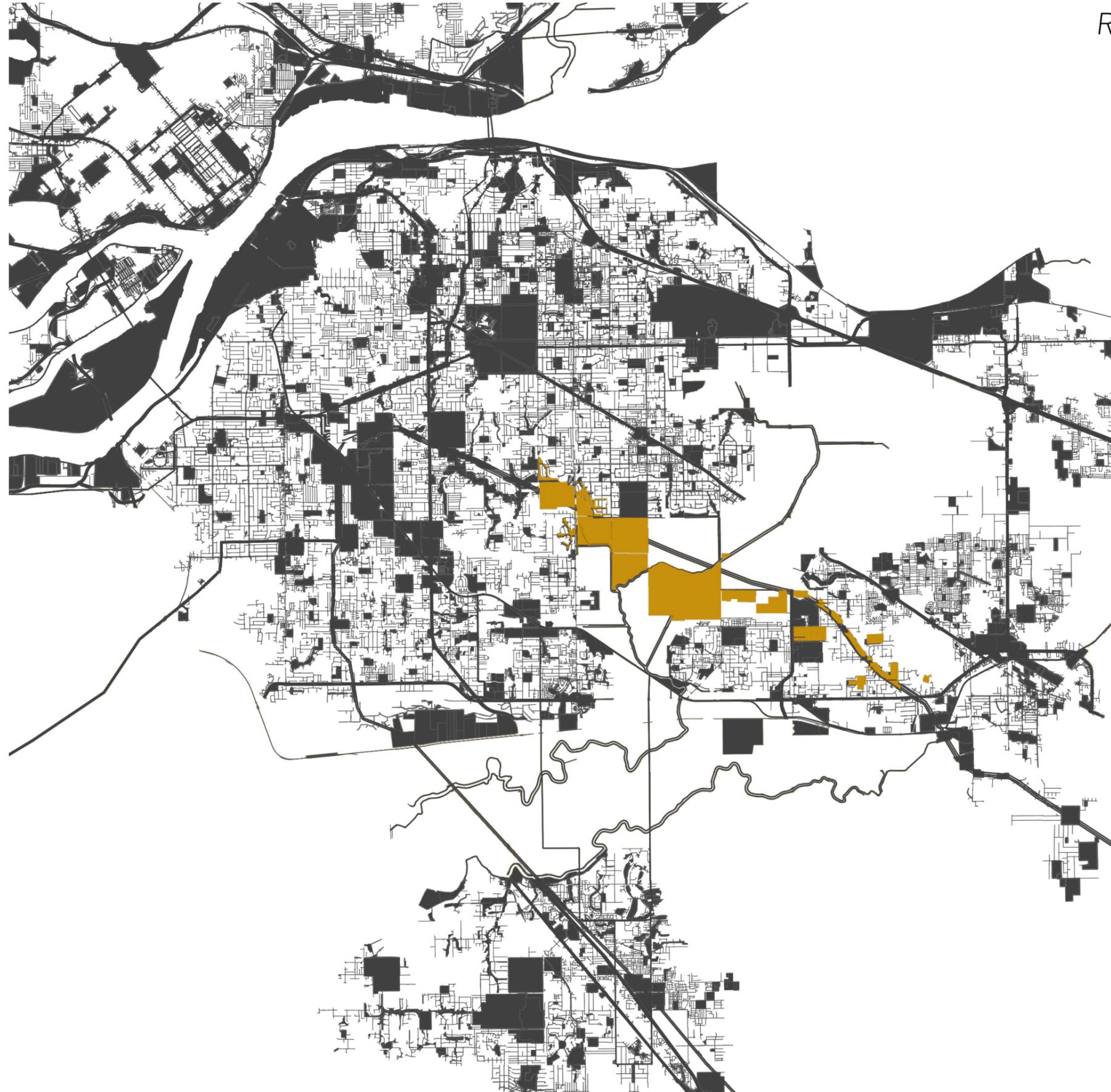
# Completing the Corridor



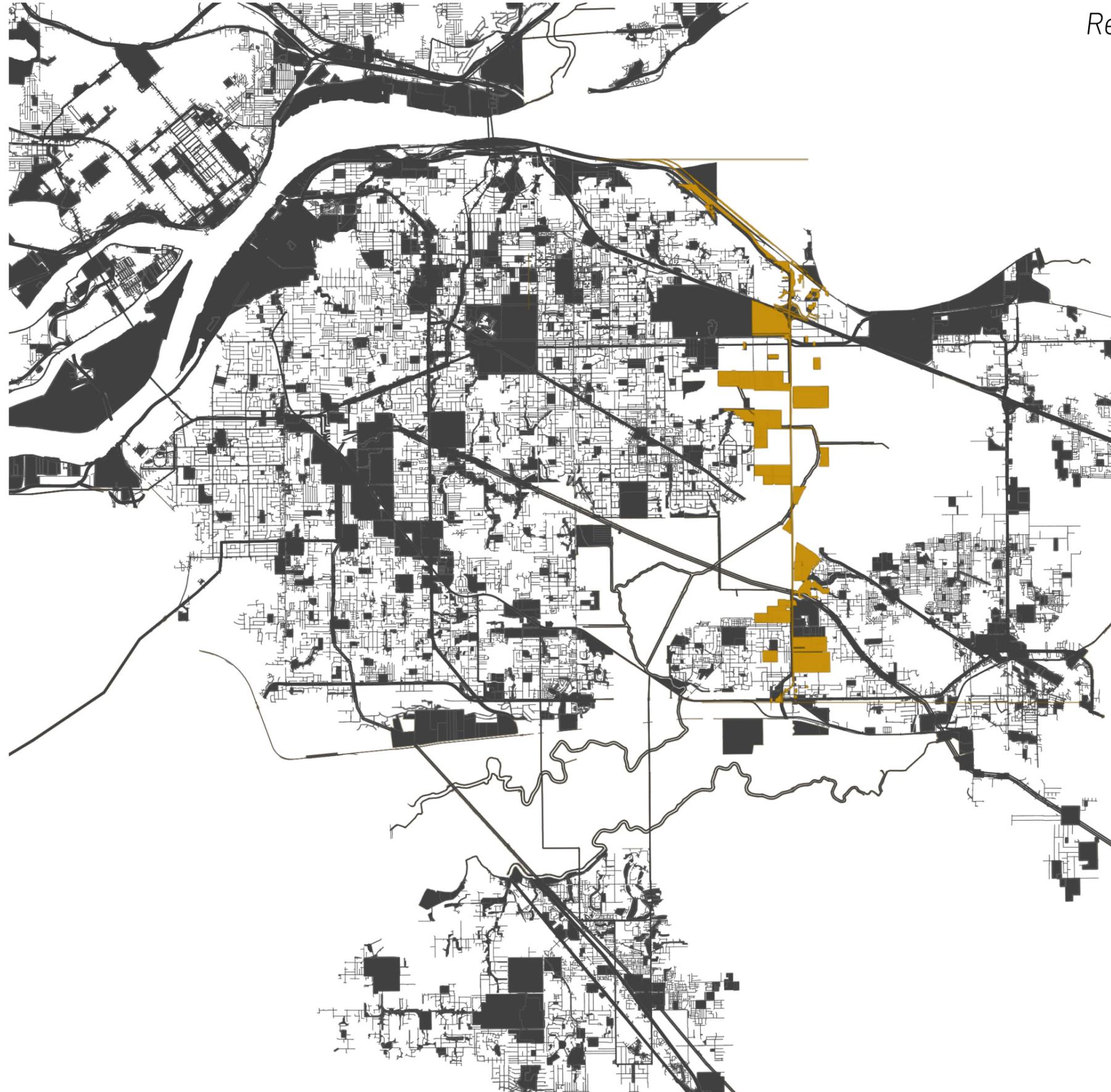
Potential to Scale Up

# Corridor Development

Regional Scale- Fraser Corridor

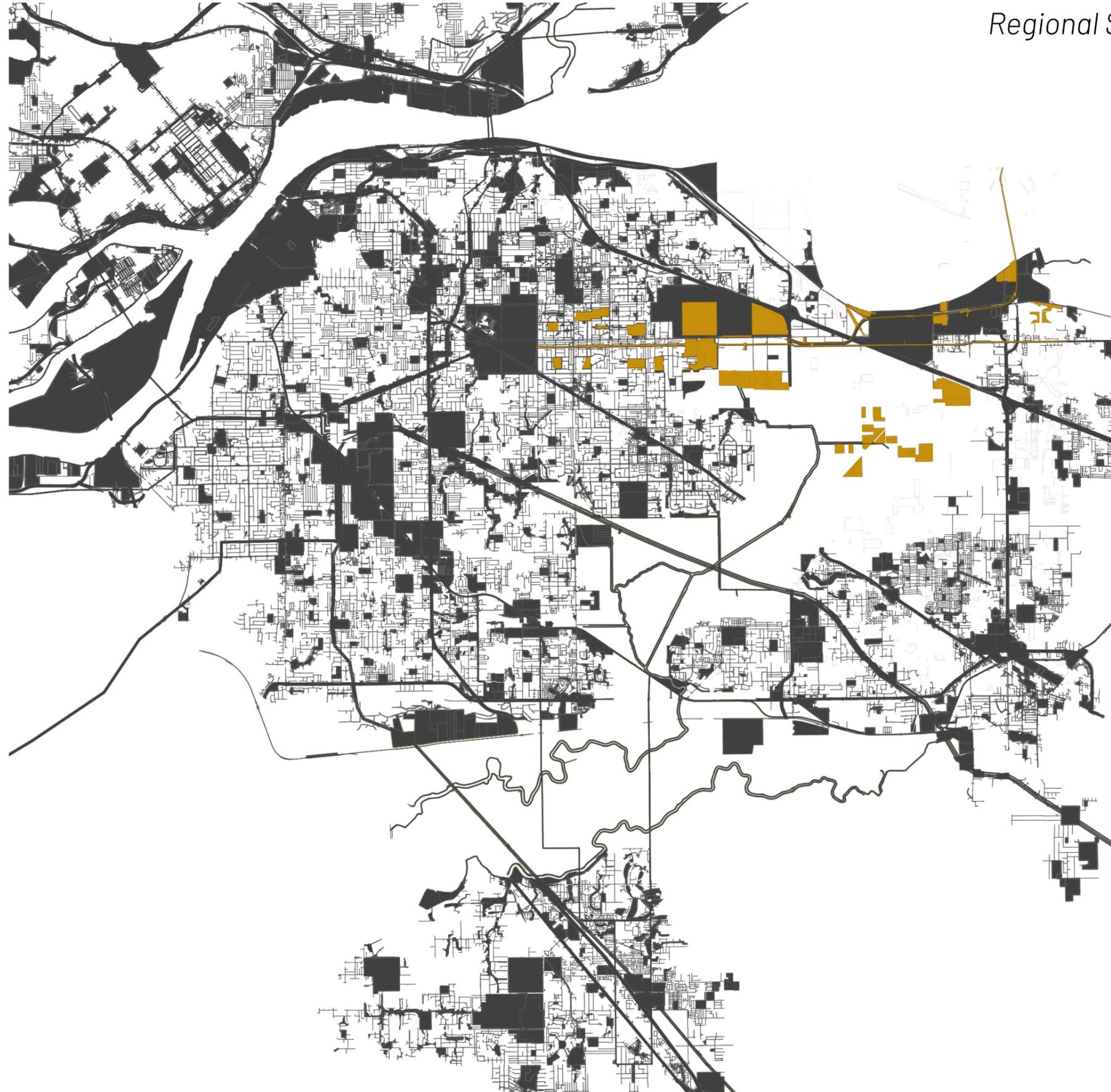


*Corridor Development*  
*Regional Scale - Pacific Corridor*

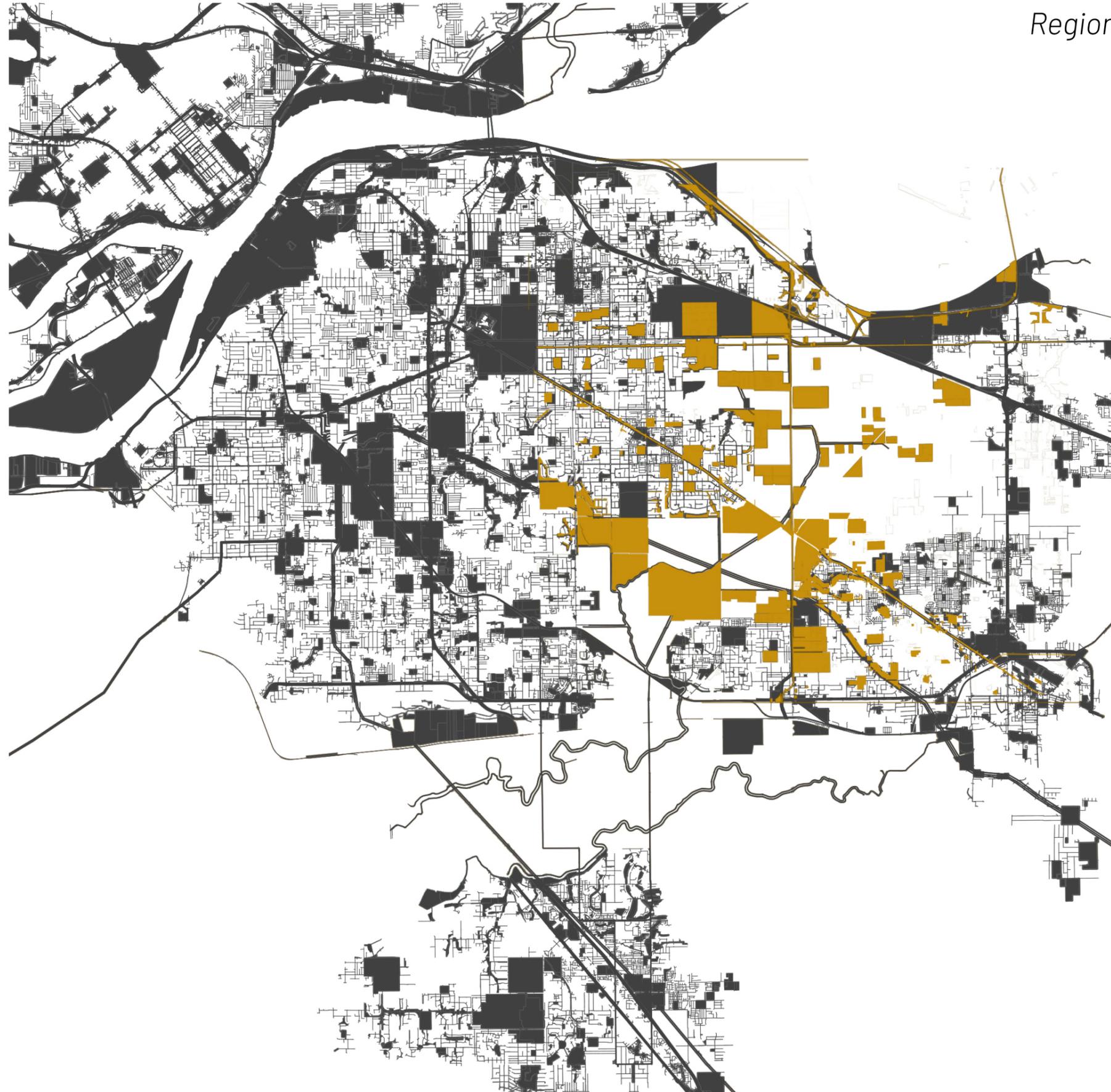


# Corridor Development

Regional Scale - Green Timbers Corridor



*Corridor Development*  
*Regional Scale -Agricultural Network*



Historic spatial transformations a **response** to society, economy and nature

Lower Mainland can begin making **incremental**, structural, and spatial changes to the regional food system in order to increase the potential for greater self-reliance.

Numerous iterations possible to reimagine our food-producing regions

Planning for the **uncertainty** of our collective future is one of the most pressing challenges that humanity faces today.