

**Nodes** Nodes are points of dense land use connected to each other and to surrounding residential neighbourhoods by important community corridors. Nodes are complete communities, each including residential, business/commercial, recreation, and ecological land uses. They evolve with different overall densities and characters over time, but the five-minute walking distance generally defines a node's size, with density decreasing with increased distance from the centre. In a well-designed community the edges of nodes overlap, placing all residents within a five-minute walk of their daily needs.

Nodes are an important part of the Greater Vancouver Regional District's Liveable Region Strategic Plan, which seeks to achieve a compact metropolitan region by concentrating growth in a number of town centres. Generally, regional and municipal town centres are key locations of major residential and job land uses, with smaller village and neighbourhood town centres accommodating local residents and workers. Over time, within each community many different kinds of nodes develop, which together can provide for all needs.

#### The Study Site: four nodes on 200th Street, Township of Langley BC

The node study sites are located at key cross-streets along 200th Street in the Township of Langley. This area was first inhabited by the Kwantlen band, which is part of the Sto:lo Nation. European settlement came with the Hudson's Bay Company, which established the Hudson's Bay Farm east of Willoughby, and the local economy continues to be strongly rural-based with other job sources rapidly increasing. The charrette team studied the area within a five-minute walk around each of the node intersections (a circle with a 500-metre radius) as well as a narrower

band of land on either side of 200th Street between the nodes.

Strung along 200th Street, the nodes influence and reflect the character of the corridor. 200th Street is a major north-south commuter and goods transportation route. The township is divided by the Trans-Canada Highway, and 200th Street currently offers the only direct connection between north and south neighbourhoods. 200th Street also provides access to Langley Regional Town Centre, the Canada/United States border, and the Fraser Highway -- an important east-west corridor -- and will connect with many additional neighbourhoods following the construction of the Golden Ears Bridge. The design of the corridor and the nodes must complement each other in order to incorporate the needs of transportation and residents alike.

Community plans for many of the neighbourhoods making up the nodes give some direction for future development. The northern nodes -- 80th and 83rd avenues -- are jobs centres and are wrapped by an extensive network of preserved Latimer Creek tributaries. The southernmost node -- 64th Avenue -- marks the edge between the township and the Langley Regional Town Centre and reinforces that centre's land uses. In between, the 72nd Avenue node is primarily residential. These two southern nodes have the potential for riparian habitat restoration throughout.

Rural heritage is important to the identity of the Township of Langley. The Agricultural Land Reserve protects substantial areas of agricultural land, restricting development to the Urban Development Zone. The township celebrates the proximity of urban and rural land uses by encouraging aesthetic references and physical connectivity between developed areas and the surrounding open spaces.

#### The key outcomes

This case study addressed a twofold

challenge: to develop a series of nodes that both reflect the distinct character of each neighbourhood and meet the future needs of the community. Because these nodes centre on 200th Street, the charrette team also had to examine how this highway corridor could transform into a walkable and attractive "main street" without overly reducing through-traffic capacity.

One of the charrette team's guiding principles was to preserve the Latimer Creek tributaries and to restore other watercourses. A preserved tributaries and trails network contains and connects the northern nodes and links schools, parks, and other key pedestrian routes with a grand open space system. In southern nodes, a fine-grained network of greenways and canals channels daylighted watercourses and people throughout the neighbourhoods. Overall, this green network creates the connective tissue tying the 200th Street nodes into a community.

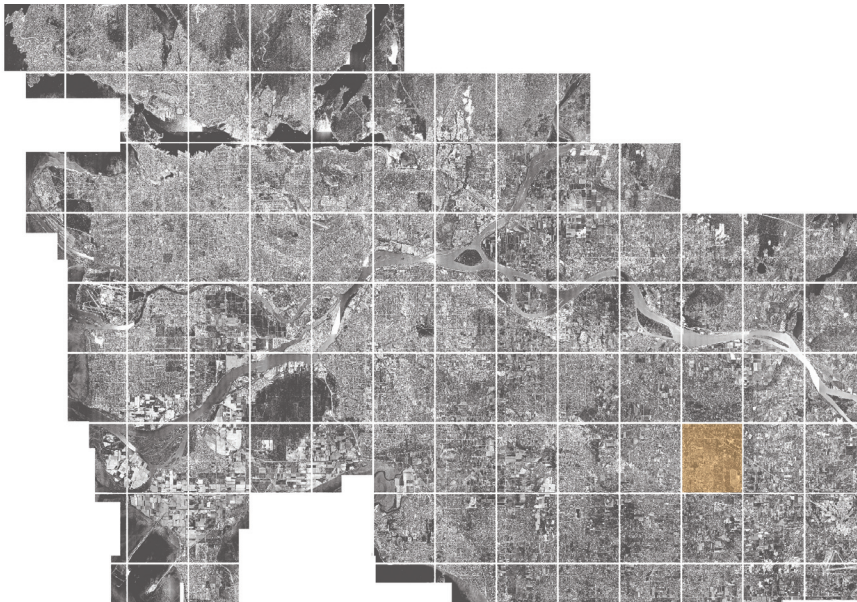
The expected lifespan of existing development influences the development pattern of each node. The nodes incorporate over 10,000 new jobs: high-tech and light-industrial in the northern nodes, with tourist commercial at the highway, and boutique shopping at the 64th Street node. All nodes accommodate home-based businesses.

The nodes include over 20,000 new homes. Each node has a mix of all housing types, but each also has a different ratio of these types. Generally, greenways and busier streets have the highest-density residential uses, and only the highest-density nodes have point towers.

Connecting the nodes, 200th Street is a multiway boulevard that accommodates pedestrians, cyclists, rapid transit, commuters, and goods movement within a safe and well-designed street section. Detailed articulation of the street section changes in response to surrounding context, encouraging slower traffic flow so that pedestrian crossings can occur every 200 metres within nodes.

*Below:*

Originally, four locations along 200th Street in the Township of Langley were selected as the node study sites, from south to north: 64th, 72nd, 80th, and 86th avenues. Early design explorations suggested the addition of a fifth node at 83rd Avenue, with the 86th Avenue site revisioned as a community gateway. As the nodes centre on 200th Street, the charrette team had to examine how this highway corridor could transform into a walkable and attractive “main street” without overly reducing through-traffic capacity.



## 50 year VISION Nodes

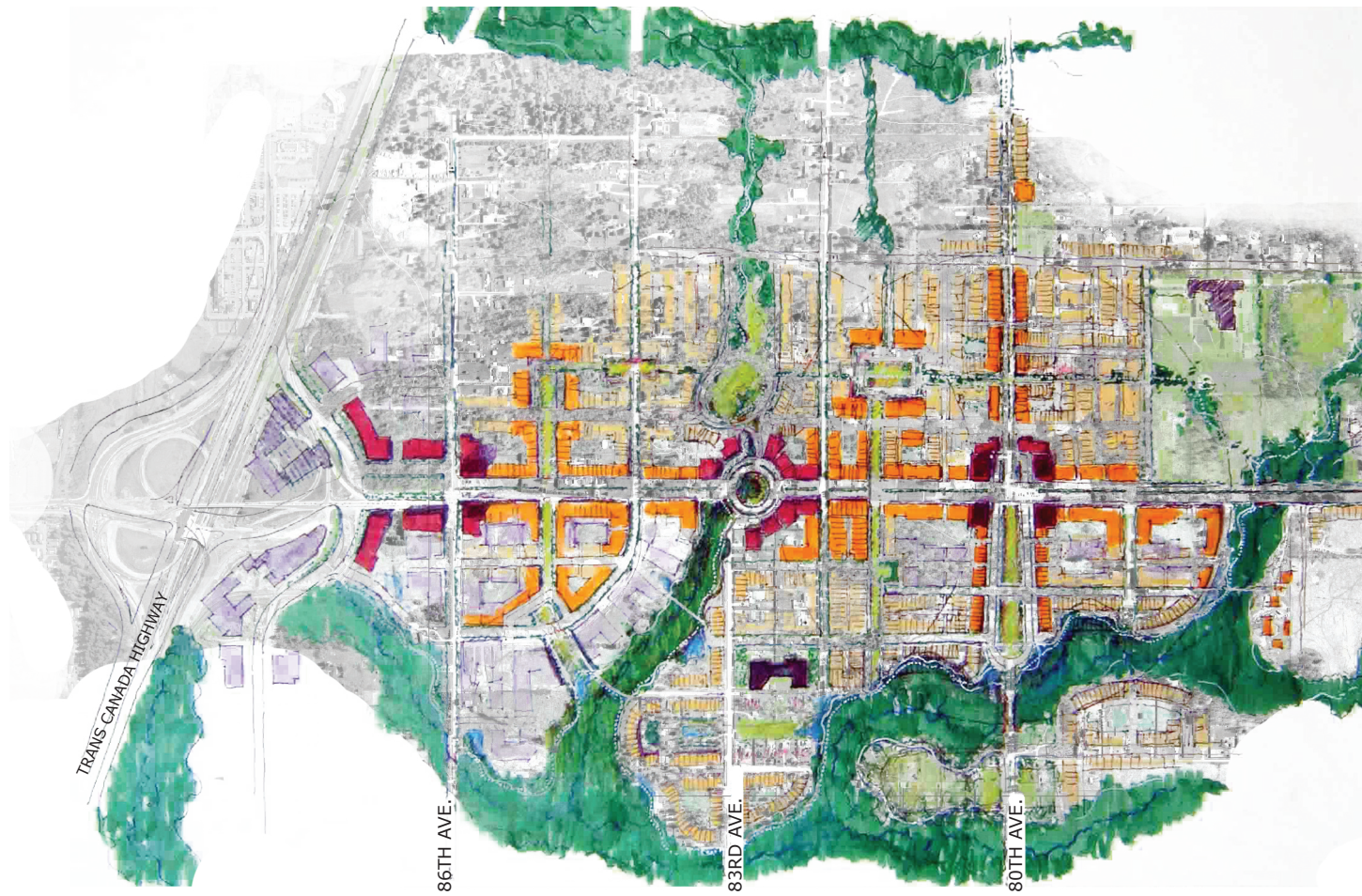


**Charrette participants:** Elaine Anderson, Elizabeth Anderson, Brad Badelt, Warren Byrd, Jason Chu, John Conicella, Paul Cordeiro, Paul Crawford, Farzaneh Ghassemi, Rhys Griffiths, Amy Hennessey, Melissa Johnson, Gary MacKinnon, Patrick Marples, Sarah McMillan, Al Neufeld, Doug Paterson, Ramin Seifi, Nalon Smith, Travis Stasney, Ben Taddei, Jackie Teed and John Turner.

### key design targets:

The following fifty-year targets for housing and employment were used to inform design deliberations for the study site. The targets were developed in workshops with city staff and key stakeholders.

- 25,000 to 28,000 residents;
- 13,900 to 20,800 new housing units;
- 8,060 to 10,650 new jobs;
- 930,000 sq.ft. commercial/retail space; and,
- 1.0 to 1.8 million sq.ft. office and industrial space.





*Below:*

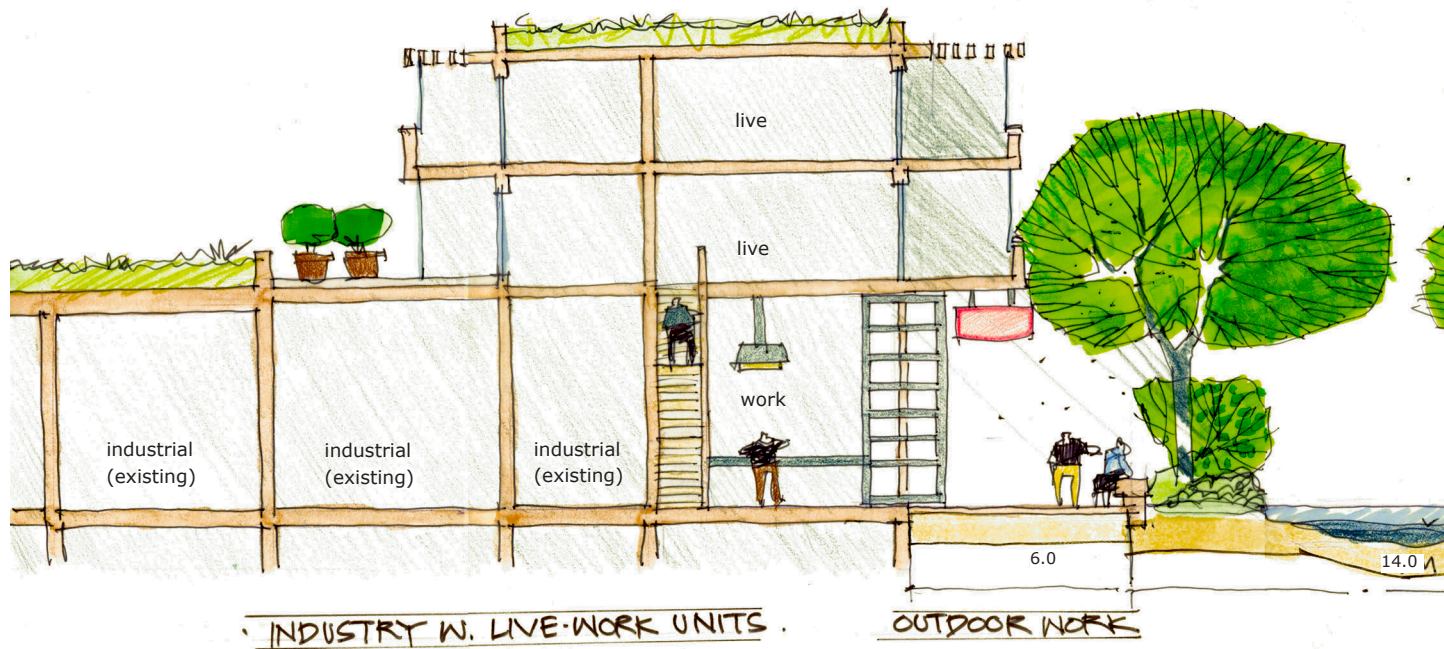
200th Street links four distinctive nodes. In the north, the 83rd Avenue node centres on a roundabout connecting the Latimer Creek corridor across 200th Street to a neighbourhood park in the east. A few blocks south, the 80th Avenue node features a linear urban green linking Latimer Creek to Willoughby Town Centre at 216th Street. These nodes are key business and jobs centres, with high residential densities and contiguous areas of preserved open space.

In the south, the 64th Avenue node creates a commercial and residential edge to Langley Regional Town Centre. The heart of the node shifts south to Willowbrook Drive, the new community shopping street, and centres on a civic plaza proposed to front the new Municipal Hall. This is the highest-density node, with commercial and civic uses and residential point towers. At centre, the 72nd Avenue node is a lower-density residential neighbourhood with a small commercial centre. Mixed-use buildings set back from the west edge of 200th Street create a Market Green, a venue for the community farmers' market. Revitalized creek corridors and many smaller open spaces characterize these nodes.

**50 year  
VISION  
Nodes**





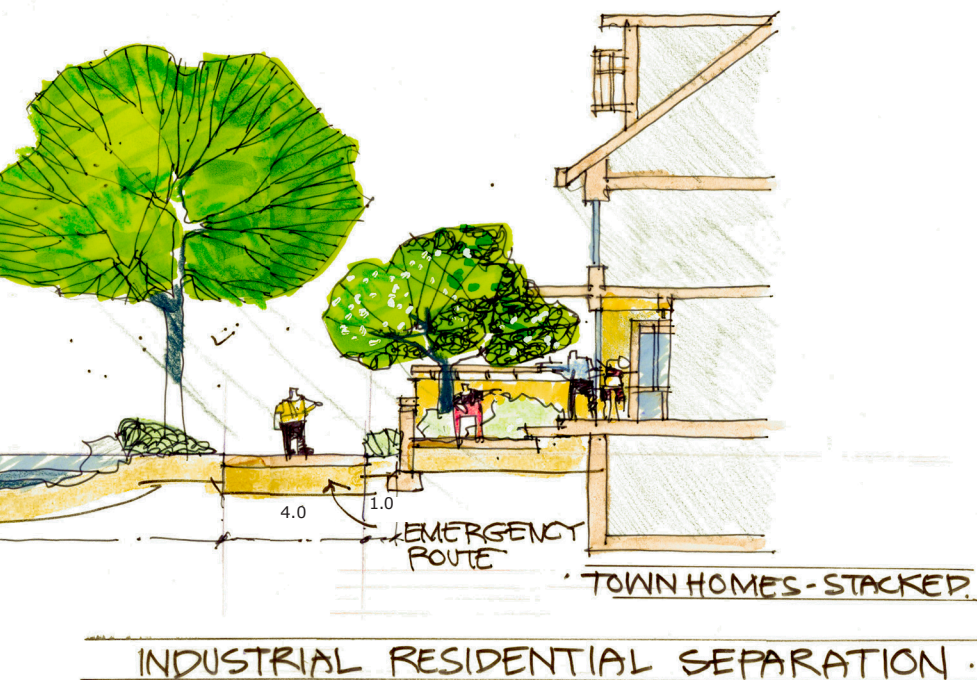


*Left:*

Every node has some jobs, but the 80th, 83rd, and 64th avenue nodes are key job centres. The location, density, and type of jobs help to define a unique character for each node. Light-industrial (light purple) clustered around the north edge of the 83rd Avenue node identifies this neighbourhood as a significant job area. The 72nd Avenue node has some commercial jobs as well as home-based businesses.

*Below:*

Innovative residential types incorporated into job areas encourage people to live where they work. Retrofitted and new large-scale light-industrial, high-tech, and retail outlets include live-work units. For existing buildings, the new residential unit "barnacles" to the present structure, which is also retrofitted with a green roof.



good &  
plentiful  
**JOBS**  
close  
to home

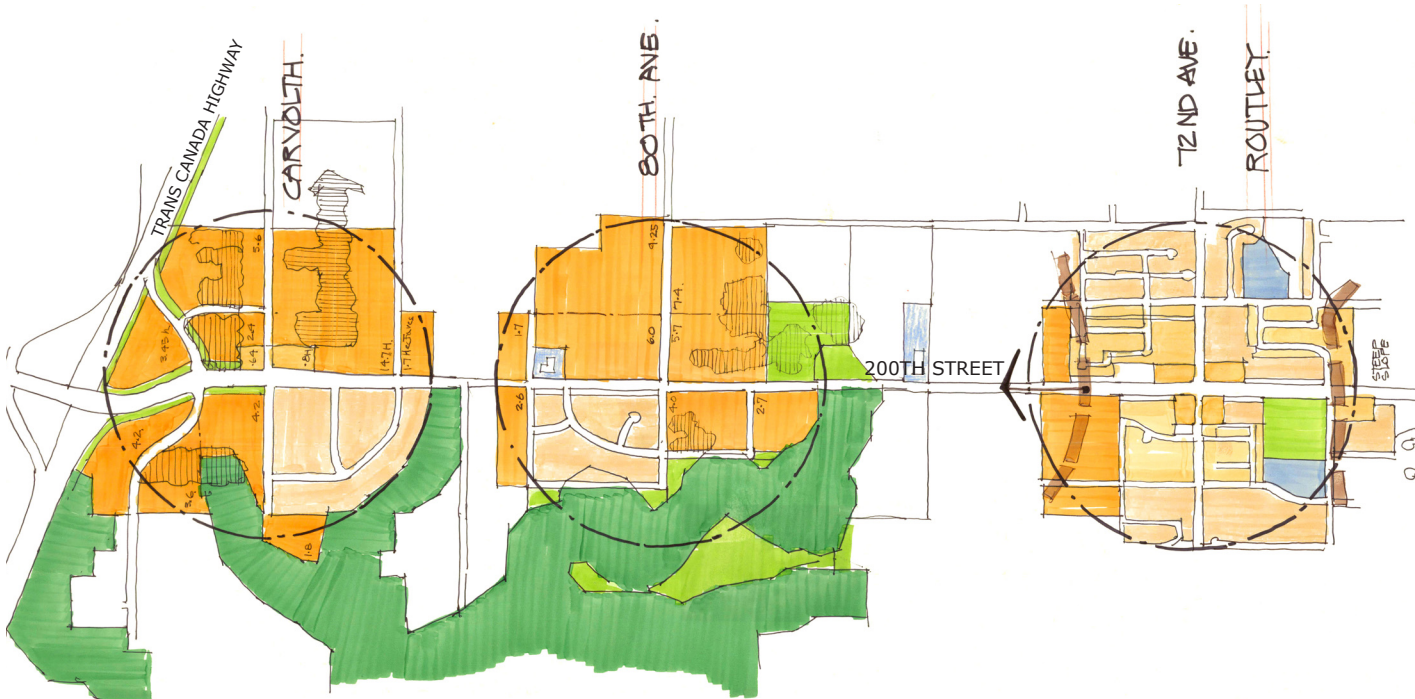
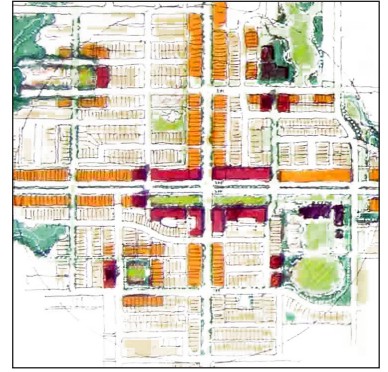
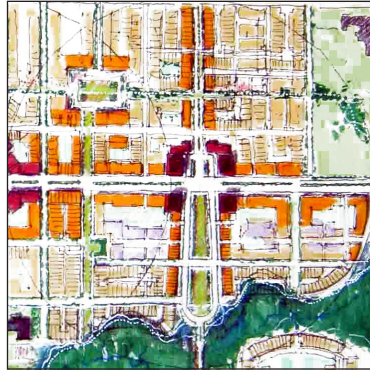
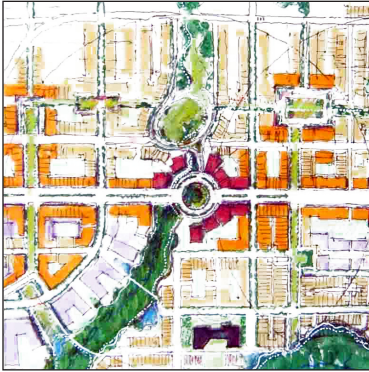


key charrette conclusions:

**jobs sites** located within communities  
reduce time spent travelling to work

- Locate some jobs at every node, but identify key nodes -- such as around 64th and 80th avenues at 200th Street -- and locate the majority of jobs there;
- Design innovative housing types to incorporate living into job centres, particularly into business and industrial areas; and
- Use the location, density, and type of jobs to help define the character of each node.







*Left, top and bottom:*

Each node has a unique mix of existing building stock that influences how rapidly redevelopment occurs. Much of the Carvolth neighbourhood - located just west of the highway -- is ready for immediate redevelopment. The 80th, 83rd, and 64th avenue nodes primarily contain lands that will be ready for redevelopment within the next fifteen years. The 72nd Avenue node is generally populated by recently completed residential development, which won't be ready for redevelopment for thirty to forty-five years.

The expected lifespan of existing development also influences the development pattern of each node. The node at 72nd remains as lower-density residential with some neighbourhood commercial. The 80th, 83rd, and 64th avenue nodes incorporate most higher-density residential -- including condominiums as well as stacked and ground-oriented townhomes. But every node has at least some of each housing type.



## different HOUSING types

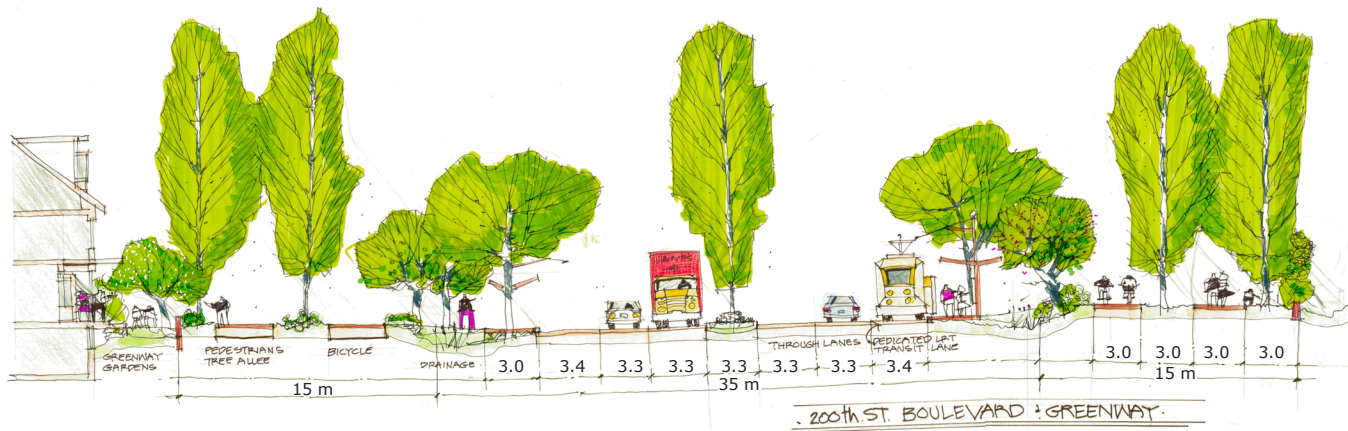
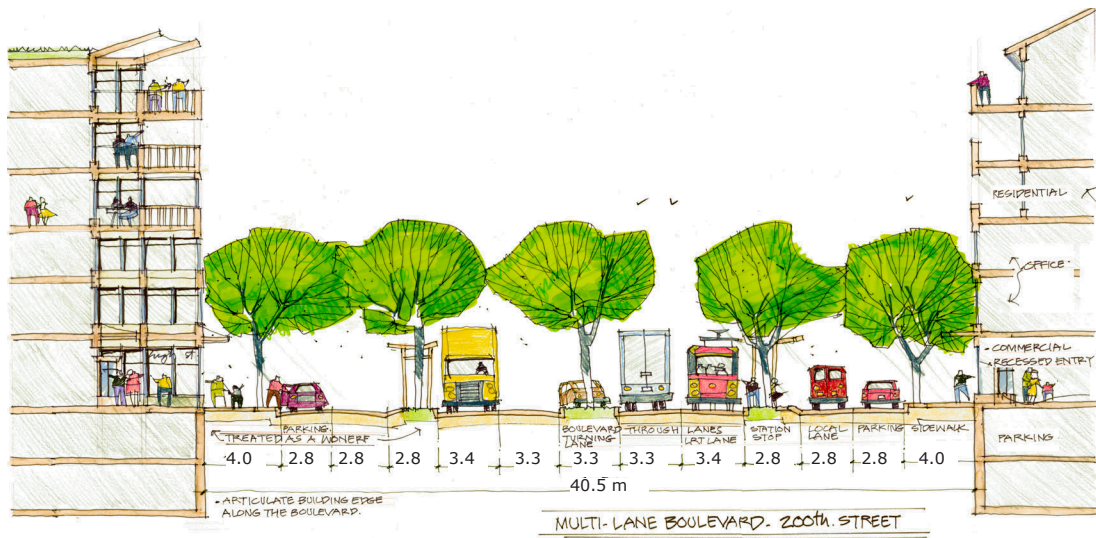


key charrette conclusions:

a range of **housing types** allows residents of differing economic situations to live in the same neighbourhood and have access to the same services

- Provide a full range of housing types to suit all income, age, and family needs in every node, but emphasize different housing types between nodes;
- Expect nodes with new building stock -- such as 72nd Avenue at 200th Street -- to develop slowly, beginning as a small neighbourhood centre at medium to low densities;
- Locate the most high-density rowhouses and apartments in nodes that are considered important commercial and job areas and that will have rapid development; and
- Locate point towers only in the highest-density nodes.





*Top left:*

A multiway boulevard establishes 200th Street as a pedestrian-scale, bicycle-friendly, rapid-transit and major transportation corridor. Two through lanes in each direction -- separated by a tree-lined median -- continue the length of 200th Street. Development eventually brings enough ridership to support a dedicated express bus/HOV lane and, subsequently, at-grade rapid transit, such as light rail. Within nodes, additional boulevards separate local and parking lanes from through traffic and provide access to abutting commercial and residential uses.

*Bottom left:*

In residential areas between nodes, wide recreation greenways and stormwater infiltration swales buffer adjacent homes. Rapid transit travels in two additional dedicated through lanes, allowing a slight increase in travel speeds to compensate for slower speeds within nodes. Pedestrian crossings of arterials occur every 400 metres as opposed to every 200 metres in and near nodes.

*Below:*

As 200th Street is the main access to the Township of Langley from the north, the charrette team designed the street section to have an overall identity that also reflects the character of the nodes through which it passes. At the 72nd node, mixed-use buildings set back from the street create a community green, the new venue for a farmers' market featuring locally grown produce, and give a unique character to the Routley neighbourhood.



**mixed  
use  
CORRIDORS  
accessible  
to all**

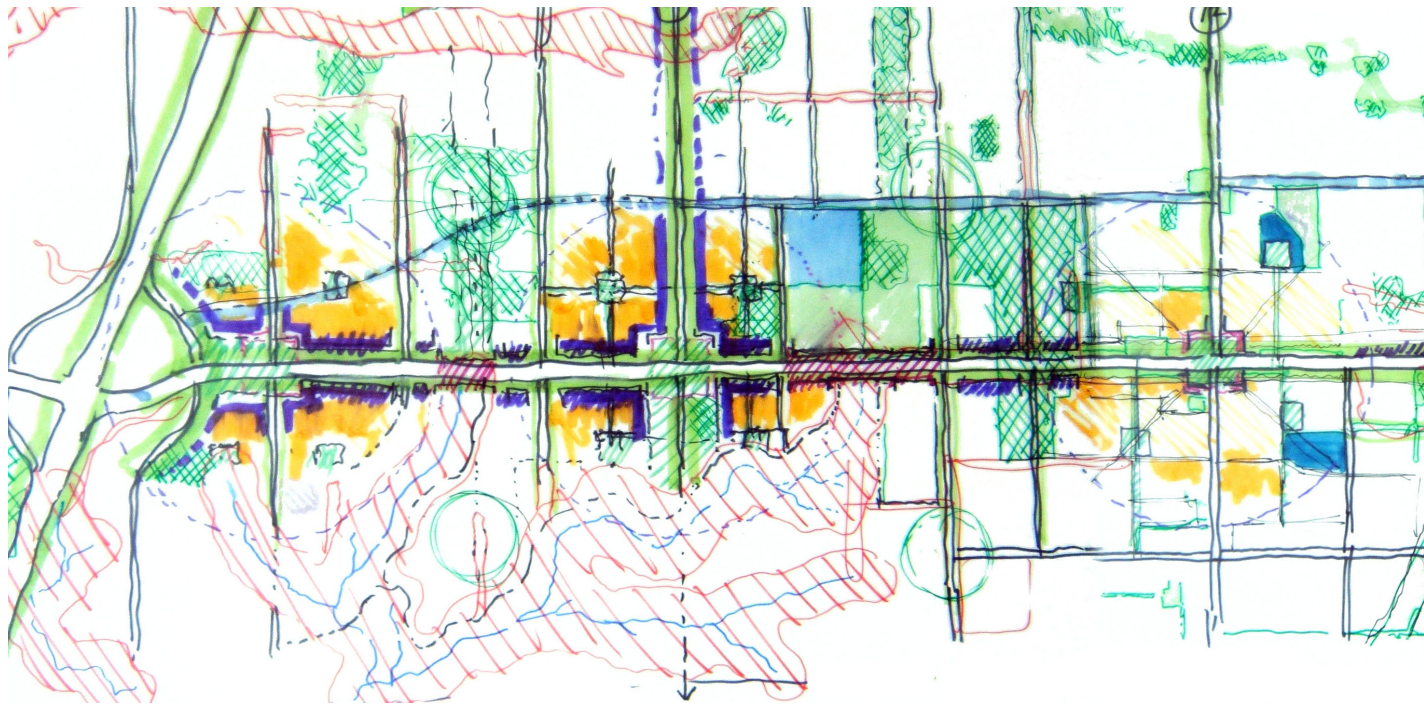
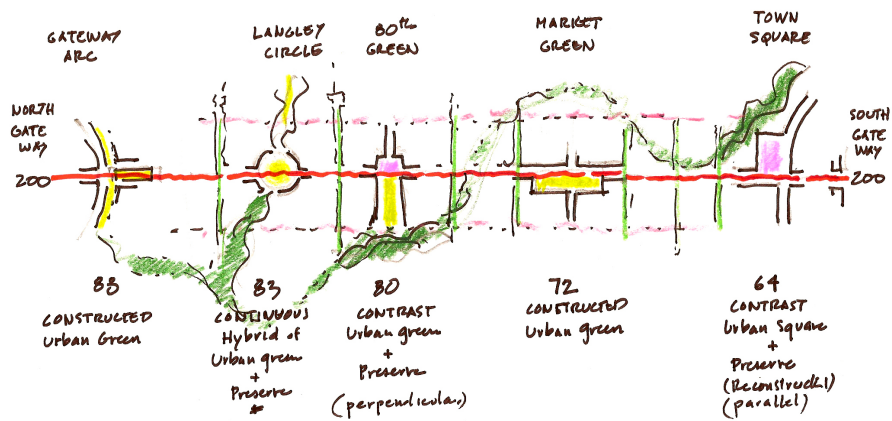


key charrette conclusions:

high density commercial and residential  
corridors focus growth along transit routes

- Design each key corridor -- such as 200th Street -- with an overall identity, but reflect neighbourhood character as it moves through and between nodes;
- Envision an at-grade, street-oriented transit system as the heart of 200th Street and of other key multimodal transportation corridors connecting nodes; and
- Use a multiway boulevard and best practices to design pedestrian-scale streets that also function as major commuter and goods movement routes.



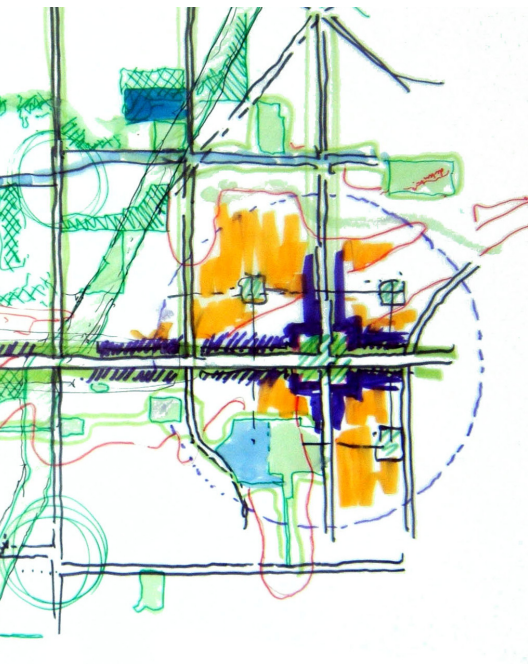


*Top, left:*

A grid of green pedestrian streets and a sinuous watercourse and trail system connect the nodes, bringing living, working, and playing within walking distance of each other. Streets integrate community greens to emphasize access to adjacent open space and to help draw the landscape into the community fabric. Each node centres on a green, which provides a unique identity and a heart to the walkable neighbourhoods.

*Below:*

In well-designed communities there are many overlapping nodes with a mix of residential, business, and industrial land uses, placing virtually all residents within a five-minute walk of their daily needs. In this early design concept, the 80th and 86th avenue nodes (at left) are close together, while the 72nd and 64th avenue nodes (at right) are spaced further apart. For the final concept, the 86th Avenue node shifted south to 83rd Avenue to connect the nodes. Over time, smaller nodes will develop between these key nodes, making the length of 200th Street a walkable neighbourhood.



**five  
minute  
WALKING  
distance**

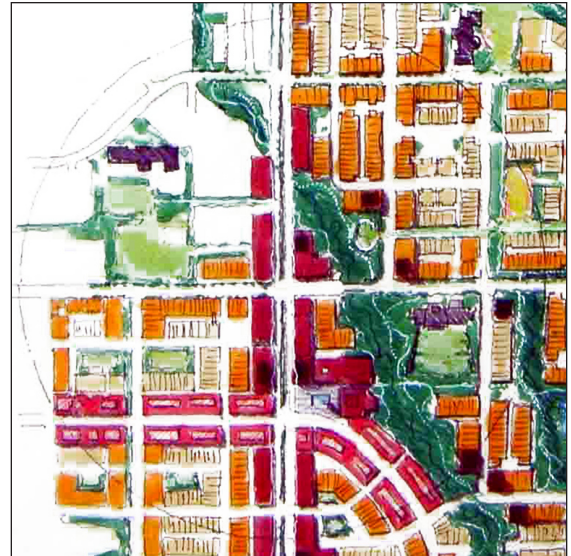
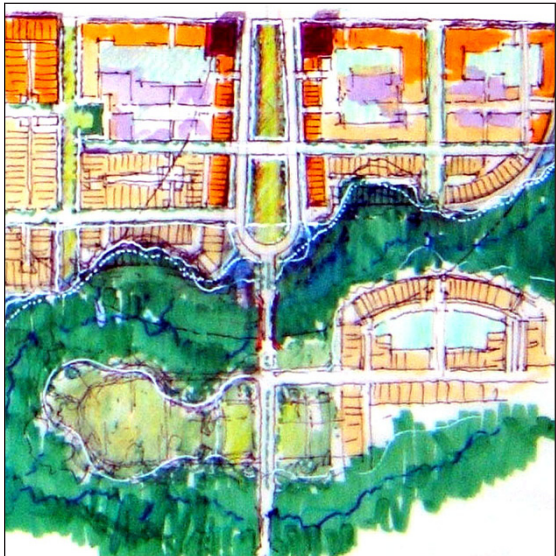
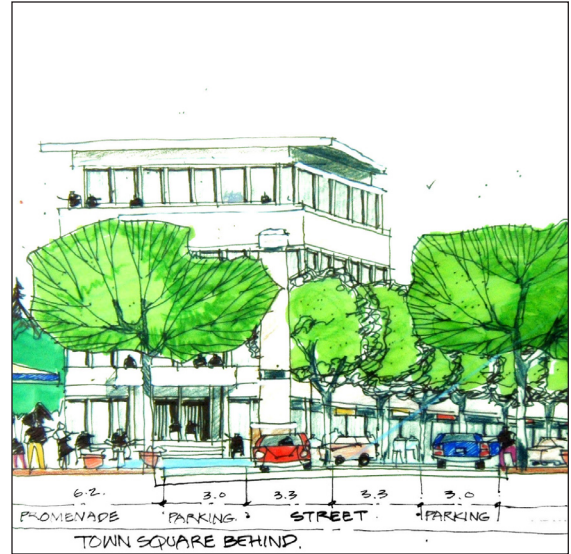
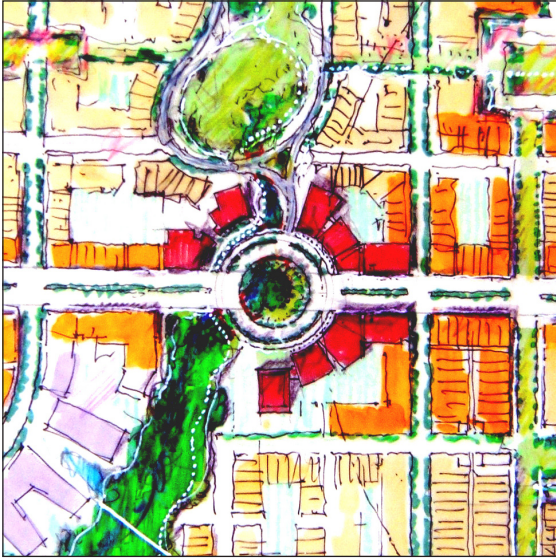


key charrette conclusions:

**interconnected street systems** link residents with the services they need

- Create an interconnected street and linear park network so living, working, playing, and transit are within walking distance of each other;
- Provide frequent at-grade crossings of 200th Street and other arterials -- a crossing every 200 metres is permitted by the Institute of Transportation Engineers; and
- Design communities that have the edges of nodes close to each other, placing all residents within a five-minute walk of their daily needs.





*Top, left:*

Streets integrate parks and open space, making them visible. Here, a small traffic diversion redirects vehicles around a circular green space to reveal a Latimer Creek tributary headwater. The depressed circular green collects, filters, and infiltrates stormwater runoff from the surrounding street, highlighting the link between stormwater and healthy streams. Mixed-use and arts buildings wrap the circle, marking this as an important place in the community. The open space network continues across the street.

*Top, right:*

Places for people to linger are important to a vibrant and lively community. In the 64th Avenue node, Willowbrook Drive -- the community's new main shopping street -- curves east from 200th Street. Situated on this curve, a new Town Square and Municipal Hall are visible from both directions along the street, creating a strong civic presence. The south-facing square invites people to stop and watch community life.

*Bottom, left:*

Preserved and rehabilitated riparian areas provide habitat and recreation space for each node. Development fits around these green spaces, which form a contiguous network, connecting residents to natural areas and other neighbourhoods. Areas in which watercourses virtually segregate an area of land (bottom left) are ideal for establishing open field neighbourhood parks that provide a unique and complementary wildlife habitat.

*Bottom, right:*

Areas without a lot of preserved habitat or with higher development density have revitalized natural areas in many smaller parks. A canal network channels daylighted tributaries and infiltrates stormwater in the 72nd and 62nd avenue nodes. This "urban creek" closely fits development patterns and connects small neighbourhood parks. Other open spaces scattered throughout the neighbourhood -- at grade and on rooftops -- ensure that all residents are only minutes away from a park.

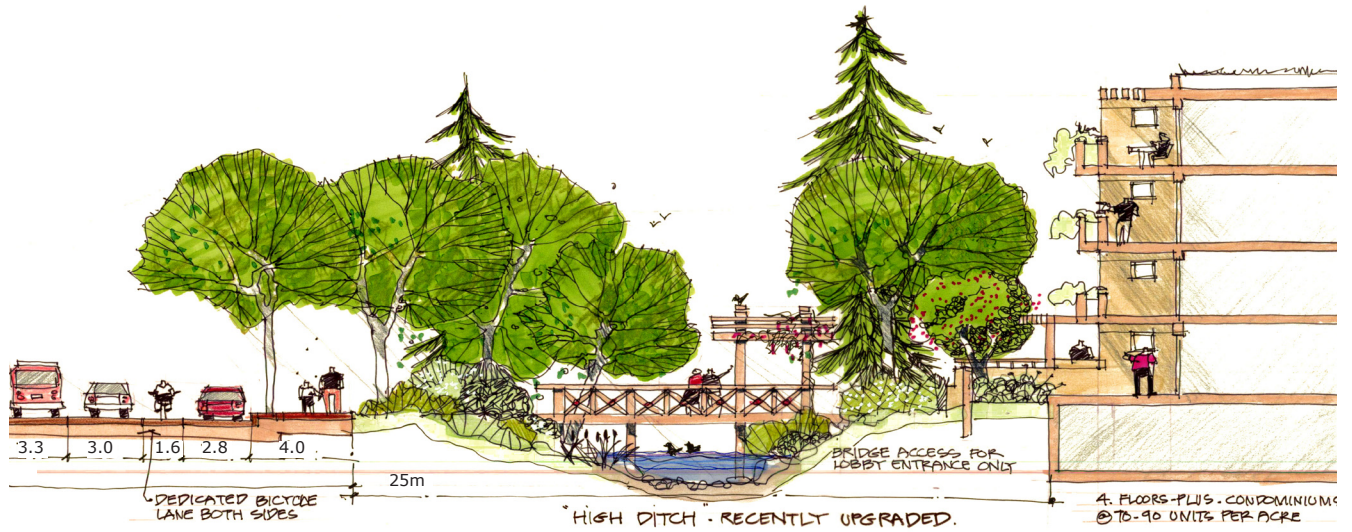
access to  
**NATURAL**  
areas & parks



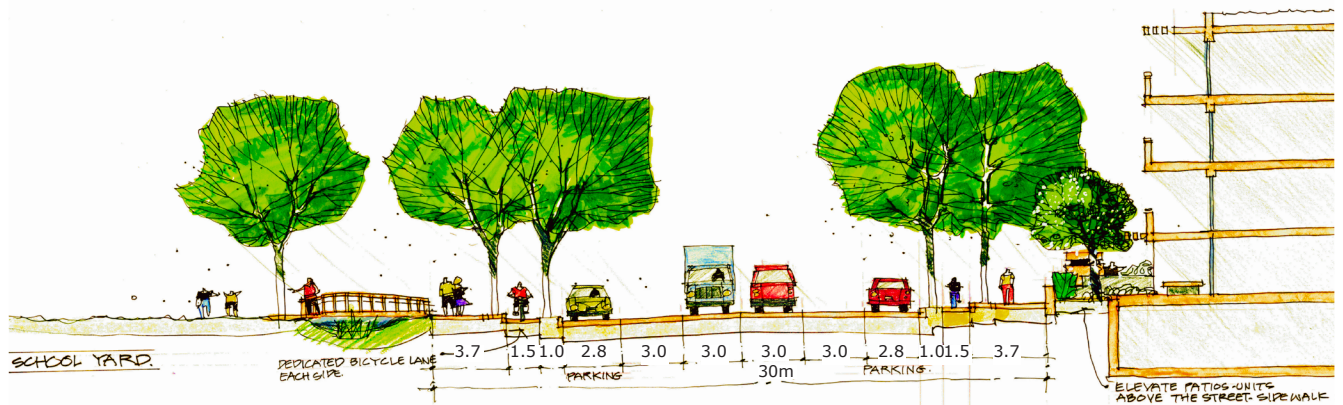
key charrette conclusions:

**green spaces** provide recreation opportunities and connect people with **natural systems**

- Make natural areas and parks visible and accessible by drawing these features into the community along linear parks and green streets;
- Fit development around large contiguous areas of preserved open space or natural areas -- such as at 80th and 86th avenues at 200th Street; and
- Sprinkle many smaller parks and revitalized natural areas throughout very high-density nodes -- such as at 64th Avenue at 200th Street.



2024th STREET - LOOKING SOUTH @ APPROX 66th.



64th AVENUE - LOOKING EAST.



*Top, left:*

Langley creeks are important sources of salmon food and habitat. Stormwater from roofs, yards, and streets must continue to infiltrate into the soil, where it can slowly recharge the streams and maintain their health after the community has been developed. Swales in linear parks, at the edge of open space, and along street corridors infiltrate water and also recall the surrounding rural character of the area. In the 64th Avenue node, wide swales provide a buffer between the street and homes, which are accessible from pedestrian bridges.

*Bottom left:*

The street section provides many environmental benefits. Narrower lanes reduce impervious area, and adjacent swales collect, filter, and infiltrate stormwater from the streets. Multiple rows of street trees contribute to a comfortable pedestrian-scale and micro-environment and reduce the heat island effect. Swales, street trees, and elevated patios buffer adjacent uses from street traffic. Green roofs help to insulate buildings, reduce energy use, and absorb rainfall. Together, these features create streets that are good for people as well as for the environment.

*Below:*

At regular intervals along the preserved Latimer Creek corridors, biofiltration ponds collect and filter stormwater before it infiltrates the watercourses. Streetside swales from surrounding neighbourhoods feed into these ponds as well as into recreational fields to capture overflow during major rainfall events.



**lighter,  
greener,  
cheaper,  
smarter**

**INFRASTRUCTURE**



key charrette conclusions:

integrating natural systems reduces  
**infrastructure** costs and environmental  
impact

- Use corridors and linear parks to collect stormwater for infiltration;
- Locate biofiltration ponds in parks and around natural areas -- particularly creek corridors -- to clean stormwater as it recharges groundwater and streams; and
- Design green streets, green roofs, and a dense urban forest canopy to reduce the heat island effect.