



Density concentrated around a potential transit stop location

Transit Corridor

Development pattern workshop

Description

The Transit Corridor development pattern transforms the blocks immediately adjacent to an existing major corridor in support of developing a transit oriented urban boulevard. This pattern has residential and commercial densities that support a lively “main street”. The building forms in this pattern contribute to the pedestrian friendly character of the urban boulevard. This pattern supports the 11 sustainability principles, particularly:

- Principle 4: *Provide a variety of transportation options;*
- Principle 9: *Connect people, goods and services locally, regionally, and globally; and,*
- Principle 10: *Provide transportation services in a safe, effective, affordable, and efficient manner that ensures reasonable accessibility to all areas of the city for all citizens.*

While the pattern does not currently exist in Calgary, SE 17th Avenue is an example of a potential Transit Corridor development pattern location in Calgary.

Challenges

The workshop addressed three challenges:

- To accommodate 200 people/ha and 120 jobs/ha, which translates to 7,200 people and 4,200 jobs in a 36 hectare - site. A minimum density of 100 to 150 people and jobs/ha is necessary to support high capacity transit. The desired Transit Corridor development pattern is well within this threshold.
- To transform an existing single-mode major corridor into a multi-modal urban boulevard supportive of high capacity transit and a mixed-use, pedestrian friendly environment.
- To provide a feasible transition into adjacent patterns within a small and narrow amount of land.

Summary & conclusions

The Transit Corridor workshop illustrates that current transportation corridors hold a significant potential to accommodate new people and jobs, support high capacity transit, and create complete, walkable, transit-oriented communities. This requires built forms considerably more compact than the existing ones. Higher density is located only along the corridor, tapering down immediately outside the pattern to transition into adjacent neighbourhoods.

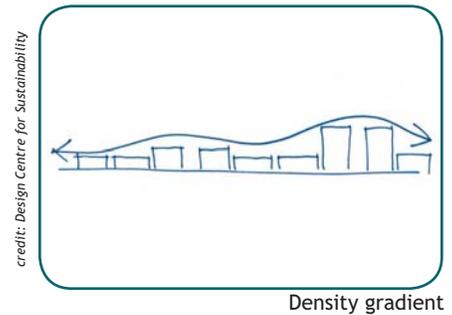
Above: The Transit Corridor development pattern transforms the areas adjacent to current major corridors into transit oriented urban boulevards. It concentrates density at key intersections, such as high capacity transit stop locations.

Transit Corridor Design strategies

The workshop team addressed the challenge of creating a dense transit corridor neighbourhood while providing an amenity for the whole community. Workshop participants developed strategies to allocate density where it would contribute to legibility and a vibrant public realm. The team recognized that a safe, attractive, and comfortable pedestrian realm is key to the success of the Transit Corridor development pattern. Strategies included creating a density gradient to transition to adjacent neighbourhoods; identifying intersections as key areas; fostering connections within and outside the pattern; designing great streets for people; and, introducing solar orientation in the design of buildings and public spaces.

1 Density gradient

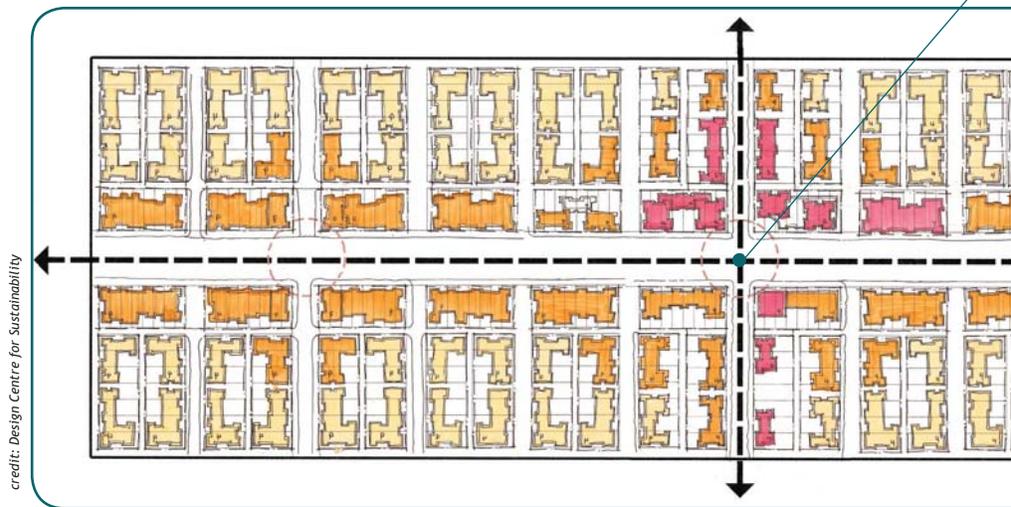
- Use a **density gradient**, with higher density mixed-use and commercial uses adjacent to the urban boulevard and arterials, transitioning to 4-storey residential apartments at the edge of the pattern.
- Intensify **use and density** at the **intersection** of major and minor arterials.
- Locate medium density residential uses (e.g. townhouses) immediately adjacent to the Transit Corridor pattern to create a **transition into surrounding neighbourhoods**.



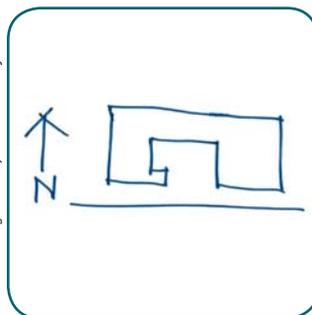
Density gradient

5 Solar orientation

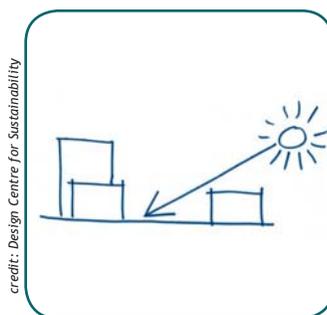
- Locate **higher buildings** on the **north side** of the urban boulevard and lower buildings on the south side to achieve density targets while permitting sun penetration.
- Incorporate **south-facing public open spaces** in buildings fronting on the north side of the urban building.
- Locate most office space on the more shady south side of the urban boulevard and retail on the north, to enliven the retail and provide a sunny shopping environment.



credit: Design Centre for Sustainability



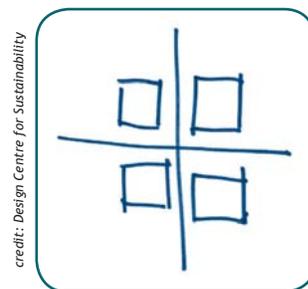
South-facing open spaces



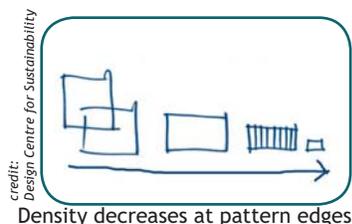
Height on the north

2 Intersections are key areas

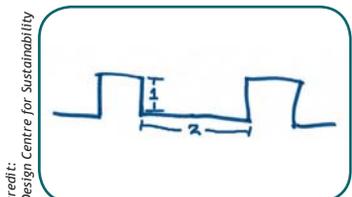
- Create a **100% corner** at the intersection of major arterials, which serves as a focal point and activity node for the corridor segment.
- Locate public space with a **civic presence** at the northeast corner of the major arterial intersection.



credit: Design Centre for Sustainability
100% corner at key intersections



credit: Design Centre for Sustainability
Density decreases at pattern edges



credit: Design Centre for Sustainability
Building to street ratio 1:2

3 Connections within and outside the pattern

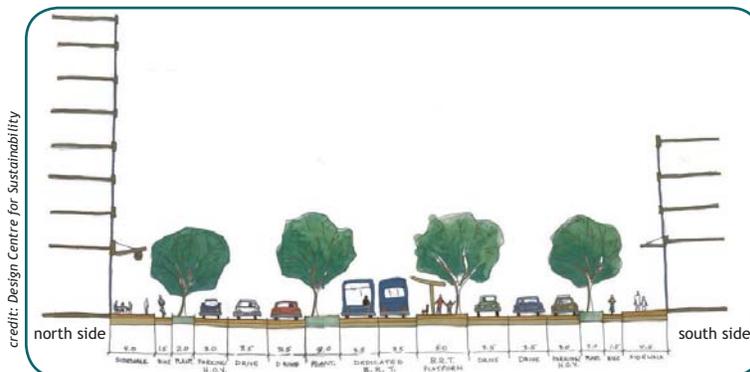
- Use a four-level **road hierarchy** to structure the pattern:
 - Major arterial: highest density; focal point and activity node
 - Minor arterial: high density; mixed use
 - Major residential: residential; long-term potential for some mixed-use near activity node
 - Minor residential: residential; some pedestrian-only sections
- Create **pedestrian and bicycle links** throughout the corridor into adjacent neighbourhoods.
- Close vehicle access to the urban boulevard from selected minor residential streets along corridors where intersections are closely spaced. Close lanes connecting to arterials and use the ROW as a pocket park with pedestrian and bike connections.

4 Great streets for people

- Utilize a **1:2 ratio** of building height to street width to create a human scale.
- Design an **Urban Boulevard** street section that:
 - Follows a transportation hierarchy (pedestrian priority)
 - Incorporates street trees
 - Creates a dedicated bus right-of-way
 - Uses on-street parking to enliven the street
 - Creates wide pedestrian sidewalks
 - Uses medians to minimize crossing distances
- Use design guidelines to create a continuous expression of **character** along the street.



Transit Corridor plan

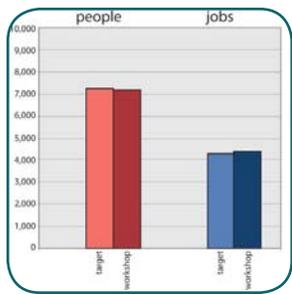


credit: Design Centre for Sustainability

An option for the Urban Boulevard

Transit Corridor

Key questions & findings



Existing, target, and workshop population & jobs

How many people and jobs can a Transit Corridor hold?

The Transit Corridor accommodates a total of 7,100 people and 4,300 jobs in a 36-hectare site along an existing transportation corridor, slightly below the population target (1%) and over the employment target (3%). This translates to densities of 200 people/ha and 120 jobs/ha.

What is the appropriate land use mix for a Transit Corridor?

The Transit Corridor intensifies the existing residential and commercial uses. It has more residential land and less commercial land compared to the expected land uses (part of the assumptions previous to the workshop). The proposal resulting from the workshop introduced civic uses, such as a library or community centre at the major intersection ([Design Strategy 2](#)). Although the team incorporated small plazas on the north side of the street ([Design Strategy 5](#)), these are not measured as significant open space, and larger open spaces do not appear in this intense urban pattern. The land use mix diversity index for the resulting Transit Corridor pattern is 0.60.

What is the physical appearance of a Transit Corridor?

The Transit Corridor pattern has a pedestrian scale ([Design Strategy 4](#)), incorporates street trees and green buildings, and has a legible character with a central civic and activity centre ([Design Strategy 2](#)). Street-oriented retail provides a continuous street wall with auto-oriented commercial discouraged or structured (i.e. parking concealed behind buildings). Transit, bikes, and pedestrians have priority over vehicles.

What is the green infrastructure within a Transit Corridor?

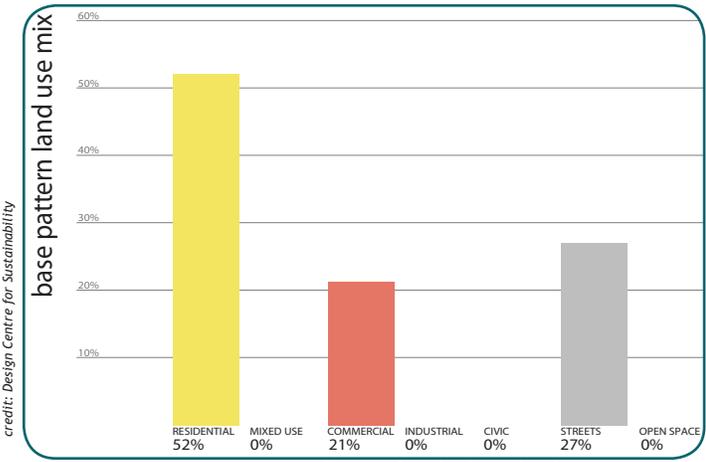
Street trees are key to reducing the urban heat island effect and creating an attractive and comfortable walking environment. Bio swales and green roofs/walls with locally-adapted vegetation (resistant to drought and cold) could be incorporated as the neighbourhood redevelops.

What is the phasing, replicability, and resiliency of a Transit Corridor?

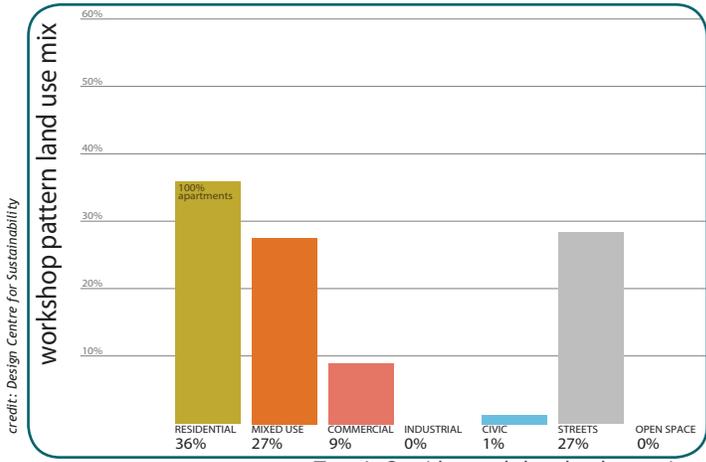
Generally, the Transit Corridor would begin to develop around the transit junction at the central civic and activity centre. A 100% corner ([Design Strategy 2](#)) at this intersection attracts and supports new development. Densification around minor arterials follows. Auto-oriented uses can be replaced gradually, with some maintained and restructured to blend with the continuous street wall. The Transit Corridor pattern is replicable along a corridor with modifications to character in response to surrounding context.

Above:
The workshop team accommodated 4300 jobs and 7100 people in the 36-ha segment of a Transit Corridor.

Below:
Through more compact built forms, the team intensified residential and commercial land uses to accommodate the people and jobs required for a desired level of transit. The proposal also introduced mixed and civic uses to the neighbourhood. The resulting land use mix diversity index is 0.60.



Transit Corridor base land use mix



Transit Corridor workshop land use mix