

5.2.1 Case One

1 Vancouver West 4th Corridor



Mobility Hub Typology

See Chapter 4.2 for more information on Mobility Hub typologies

As part of a city-wide network of interconnected Mobility Hubs, the West 4th corridor has the potential to be categorized as an Urban Corridor Zone (see 4.2) composed of sequential mobility hubs within the corridor zone, along a major urban axis. Some of these hubs are located around intersections with multiple transit routes, such as W4th / MacDonald and others may have the opportunity to create new plazas and civic space, forming a Community Mobility Hub (see 4.3), such as in the case of W4th / Vine St which will be explored in this section.

Similar typology in Metro Vancouver: Main St, Commercial Drive, W Broadway (Larch St to Alma St), Lonsdale St, etc.



Vine St & 4th Ave
Image: Y Fogelson (Sep 2020)

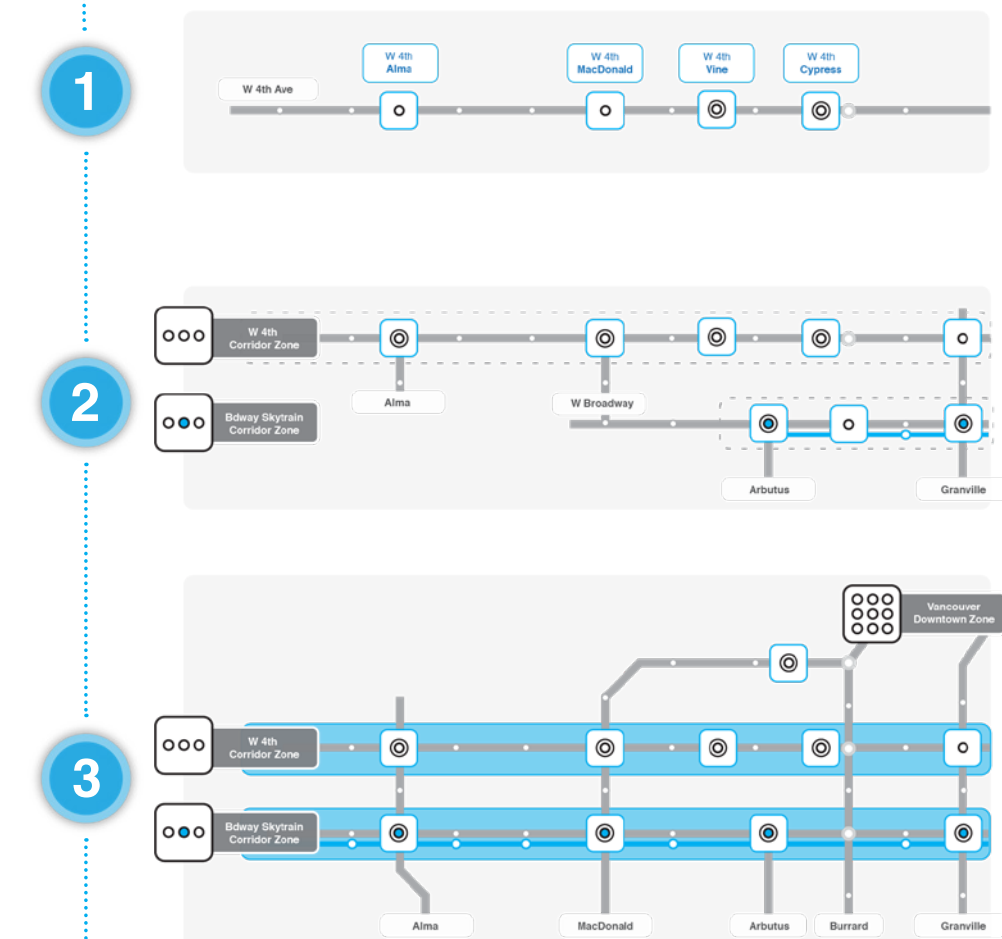
VANCOUVER

Macro Vision

Macro Vision

The vision of a city-wide network of interconnected Mobility Hubs can be achieved in an incremental gradual progression. Using the *Transitional Design Methodology* (from Chapter 3), we can imagine three phases in the timeline:

- ① The first phase being the immediate action in the time frame of 1-2 years. Here we can imagine piloting of selected locations to test the *Community Mobility Hub* typology. In this phase the redesign proposed in the phase 2 can be tested with tactical urbanism methodology of light infrastructural changes. New mobility uses and services can be tested and expanded within this pilot. At this point each location is a separate test site and new geofencing and connectivity technologies can be trialed at the mobility hub level or along sections of the corridor.
- ② The second phase represents the mid range (5-10 years) concretization of pilots done in the first phase. Here we can imagine the corridor multiplying its mobility hub locations along the corridor. Furthermore, a link can be established with the Arbutus subway station on the Broadway corridor, which by this point in the time-frame (of around 5-6 years) is scheduled to be complete. In this phase, new mobility services can be integrated within a MaaS enabled network.
- ③ In this visionary phase, the W4th corridor is an integral part of the city network of connected mobility hubs. The network functions like a rapid transit system, portrayed by a subway system style map as its user interface. In the time-frame of around 30 years, connections with other major streets and the parallel Broadway mass transit mobility corridor, with the intended continuation of the subway line further west towards UBC. years, connections with other major streets and the parallel Broadway mass transit mobility corridor, with the intended continuation of the subway line further west towards UBC.



Current Situation

West 4th Corridor Today

West 4th Avenue is a main corridor connecting UBC and Vancouver seaside westside neighborhoods. It has ample commercial activity, in particular between Burrard and Balsam and again around MacDonald and Alma intersections. The corridor is served by a number of different bus routes, including express services, mainly attending the UBC anchor and the residents connecting to the city's downtown.

West 4th corridor typology is similar to other corridors in the Metro Vancouver area which are also commercial corridors serviced by frequent transit lines. This typology is of a main artery with 3 lanes in both directions, of which the curb lane is not generally used for movement and has predominantly use of permanence, allowing for the allocation of a fixed overnight element like a parklet or bike-share docking station.

West 4th & Vine St

This location was selected by the researcher as it represents a typical intersection, as imagined for the generic design proposal of the Community Mobility Hub in Chapter 4. This case study was used in the workshop as an example for selection of other sites. Additionally, the researcher has specific in-depth knowledge of its day-to-day functioning through daily observation over a period of a year, as a resident at the specific location.



West 4th looking west - potential for pick-up drop off and bus bulbs



Vine St looking north - potential for plaza with water views, integration with bike-share and Covid patios



Covid curbs for queuing areas at Shoppers Durg Mart (left) and Wholefoods (centre), Covid patios and Food Trucks, W4th (right)

0

Phase 0 | Current Situation | August 2020

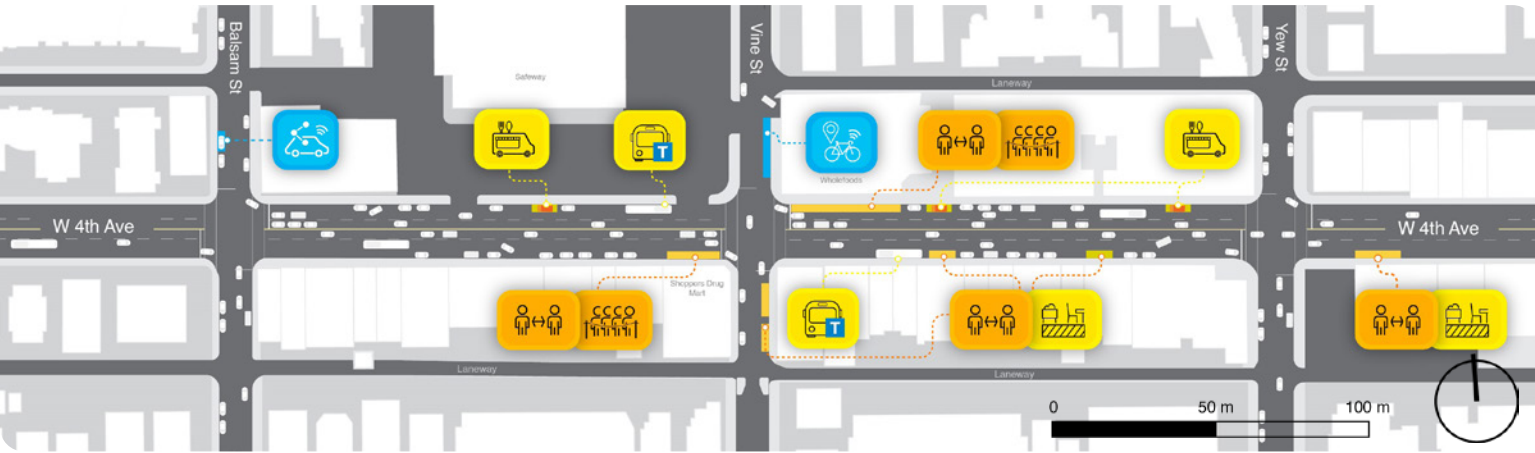
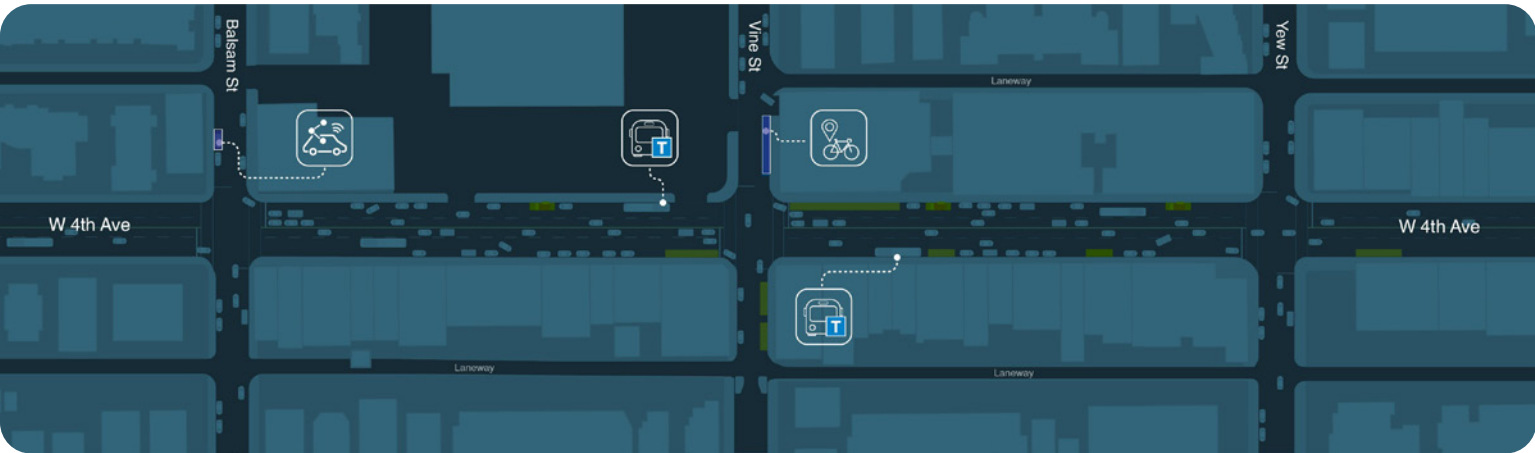
VIRTUAL

- Transit + Active + Activation + Micromobility
- Transit: real time bus times in various trip planner / navigation apps
- Bike-share - App Silo: Mobi – 1 connected docking station

"Blue Group"

Vehicular New Mobility

- PU-DO – Apps: Uber, Lyft, taxi apps. No ride-hail pick-up drop off restrictions or geofencing within area
- E-com / delivery: e-commerce and delivery services in silos. Food delivery apps available.
- Car-share – Apps: Modo - 1 connected space, Evo available in area
- Parking Apps: Some integration between fleets and individual parking apps (PayByPhone Business for fleets). Parking apps and EV-charging apps in silos



PHYSICAL

- Transit + Active + Activation + Micromobility
- Transit: Express bus: 84, 44 (cancelled during Covid) / Bus: 4, 7, 14
- Covid curbs: Social distancing queuing areas: Wholefoods, Shoppers Drug Mart
- Covid Patios: around 6
- Food-trucks: 2-3 vehicles regularly
- Bike-share: 1 location

"Blue Group"

Vehicular New Mobility

- PU-DO: currently no area allocated
- Delivery of goods direct to addressee or at Canada post location
- Car-share: Modo: 1 location. Evo: available in area, no designated space

VANCOUVER

1

Phase 1 | Piloting
1–2 years

VIRTUAL



"Yellow Group"

Transit + Active +
Activation + Micromobility

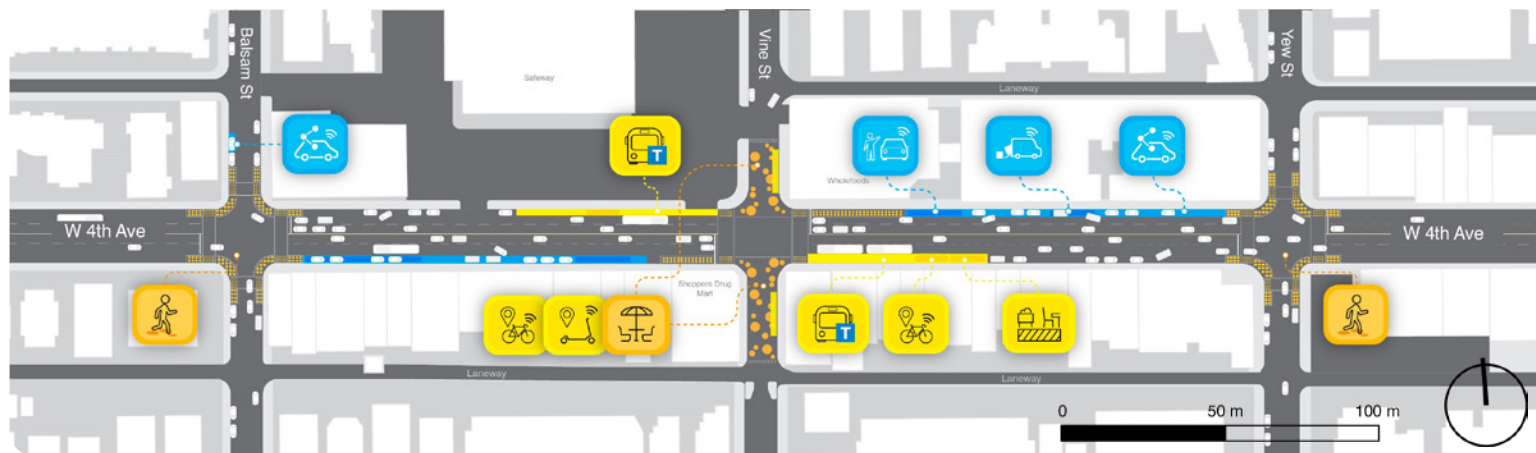
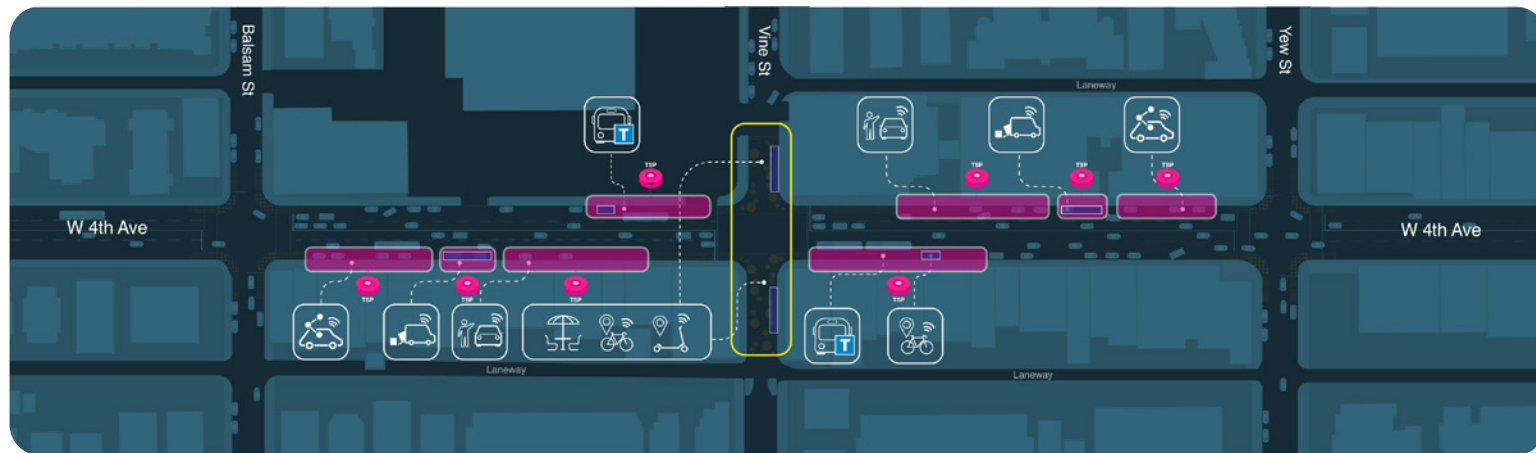
- Transit + Micromobility:** Pilot integration possibilities, for example through compass card or MaaS Pilots
- Micromobility:** Trial of e-bike and e-scooter integration through single booking and payment system.
- Civic space** to promote community engagement through business district and municipal website and social media, enabling booking location for community activities.
- Mobile street commerce:** Testing of e-permits for street vendors and food trucks for booking locations
- Vision Zero** – analytics from sensors for studying vehicle-pedestrian conflicts in intersections



"Blue Group"

Vehicular New Mobility

- PU-DO:** Trial of Geofencing for ride-hail TNCs pick-up drop off to redirect to parklet within apps, integration of booking system
- E-com** - trial of reservation of slots with booking apps, testing last-mile delivery technologies in e-com parklet
- E-Fleet** – testing of grouping of different car-share services to single booking system / trial of dynamic curb space rent or contract between the existing and new fleet companies / testing of integration of parking and EV-charging apps with fleets



PHYSICAL



"Yellow Group"

Transit + Active +
Activation + Micromobility

- Transit + Micromobility:** bus bulbs with new bus shelter on western bay combined with bike share
- Plaza + Micromobility:** Plaza at W4th/Vine with provision for bike share, e-scooters
- Vision zero:** safe intersections at W4th/Yew and W4th/Balsam
- Covid curbs** to become sidewalk extensions



"Blue Group"

Vehicular New Mobility

- PU-DO:** parklet area for passenger waiting + designated 3min zone / 1 location westbound / 1 location eastbound
- E-commerce:** parklet with unloading zone + delivery bike parking + designated 15min zone / 1 location westbound / 1 location eastbound
- Car share:** designated zone / 1 location westbound / 1 location eastbound

VANCOUVER

2

Phase 2 | Concretization
5–10 years

VIRTUAL



"Yellow Group"

Transit + Active +
Activation + Micromobility

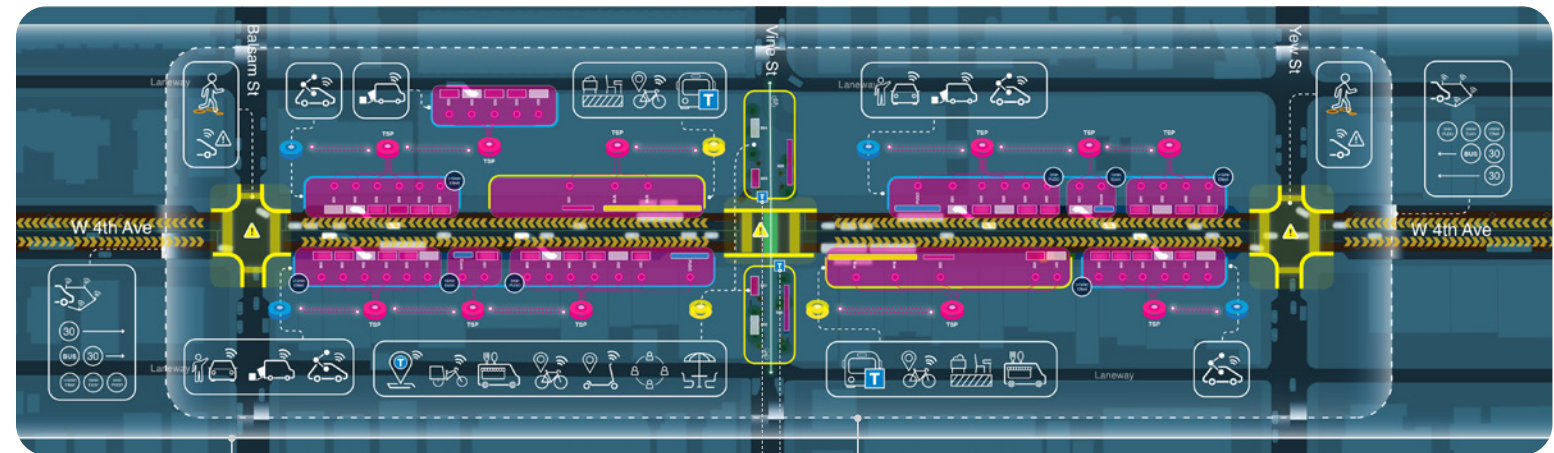
- Mobility Hub integration in city wide network
- Transit:** MaaS ready transit integration with other connected modes
- Civic space:** E-permits and scheduling for local community activities
- Mobile street commerce:** E-permits for street vendors, food trucks and commercial public space use through booking of designated locations
- Vision Zero** - Geofencing at intersection integrated with V2I real-time data and analytics
- Vision Zero** - Geofencing along corridor coded with road regulations of speed limit and congestion charge.
- Congestion charge, LEZ (Low Emissions Zone), ZEZ (Zero Emissions Zone) enforcement through geofencing as well as sensors



"Blue Group"

Vehicular New Mobility

- Network integration of the different siloed groups from previous phases into a MaaS enabled system
- PU-DO:** Redirect ride-hail activity within corridor geofence to terminal location, terminal integrated within Mobility Hub
- E-com:** redirect e-com to parklet to dispatch last mile delivery
- E-Fleet:** redirect fleets to designated areas
- Integrated EV charging and storage of vehicles mapped throughout the area



PHYSICAL



"Yellow Group"

Transit + Active +
Activation + Micromobility

- Transit:** Offset Transit Lane on W4th with concretized bus stations on previous bus bulb trial locations
- Mobility Hub station totems at both sides of plaza, totems with booking/check-in stations, wayfinding integrated in streetscape
- Micromobility:** Formalize and expand bike share and e-scooters docking stations located in plaza and adjacent to transit stops, add e-cargo loading facilities
- Civic Space:** Redesign of pedestrian area to include concretization of plaza and connected transit stops with additional sidewalk extensions
- Possible new development at Safeway site to interact with active frontage to plaza, eastern bus bay and sidewalk extension
- Vision Zero:** Implementation of safe intersections with sensors and V2I (Vehicle to Infrastructure) technology



"Blue Group"

Vehicular New Mobility

- PU-DO:** several locations, each including terminal with service kiosk and shelter, Mobility Hub wayfinding + designated 3min zone of several curb spaces
- E-commerce:** several locations, each includes parklet with new uses (such as lockers or delivery bike facilities), 15min zone of designated curb space
- E-Fleet:** several locations, each with designated 15+mins stopping zone for registered fleets, wayfinding, curbside EV charging docks