



How municipalities can support microhubs

Businesses today need to move goods both efficiently and sustainably. This means making informed decisions about new delivery models that respond to rapid changes in how and when customers want to receive goods they ordered online. One such change that many urban businesses are considering is using microhubs to consolidate small numbers of deliveries near the final delivery point. Municipalities can play a key role in setting up a supportive environment, such as microhubs, for freight in dense urban areas.

This guide presents essential information for municipalities that want to support businesses in testing and implementing microhubs in their delivery operations.

Why now?

E-commerce activity — and associated customer demand for same-day and home delivery — is rapidly growing in Canada. This will put more trucks on our highways and local roads, contributing to increased greenhouse gas emissions, traffic congestion, street noise, and greater conflicts and competition with other users for space on roads, sidewalks and boulevards. Microhubs can help businesses address both efficiency and sustainability in their last-mile delivery operations. By supporting last-mile delivery solutions, including microhubs, cities can help reduce freight traffic, carbon emissions, and local air pollution.

What makes microhubs successful?

The successful implementation of microhubs requires the consideration of three elements: relevance, suitability, and feasibility. These are further described in Table 1, along with indicators that municipalities and other groups can use to assess the conditions in a given region.

What are microhubs?

Microhubs are logistics facilities for micro-consolidation, which is the bundling of goods at a location near (within 1 to 5 km of) the final delivery point. Microhubs have been successfully deployed in North American and European cities. In general, microhub operations have four common characteristics:

- Focus on the delivery of smaller and lighter loads
- Are intended to reduce the number of vehicle trips in an urban area by transferring goods to a cleaner mode of transport, such as cycling or walking, for the last mile of delivery
- Are typically operated by privately owned transportation companies
- Are located within an urban area near the final delivery point

See Figure 1 for more details about consolidation facilities.

The characteristics of consolidation facilities

Urban consolidation centres are larger, permanent facilities that allow businesses to consolidate and coordinate deliveries between freight carriers.

or mobile structure, operate on a permanent or temporary basis, and may be operated by one or more businesses in parallel.

Delivery microhubs are smaller storage facilities located in an urban area. They can be a building

Lockers are very small customer-accessible units located close to the final delivery point.

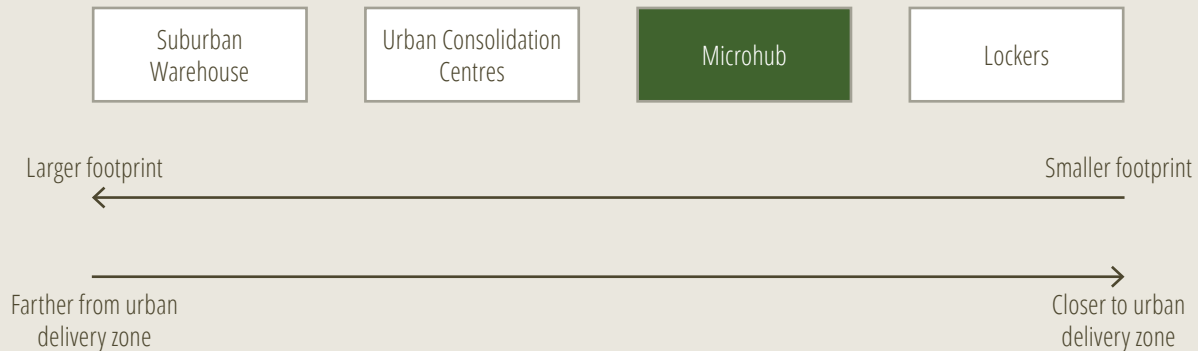


Figure 1: Microhub operations have a place in the hierarchy of consolidation facilities

Table 1: Conditions for microhub success¹

Condition	Example indicators
<p>Relevance</p> <p>The relevance or need for micro-consolidation in a given area is based on the current and potential demand for goods delivery. Dense urban areas tend to have higher relevance since there is a high density of businesses and households in a specified geographic area, increasing the potential demand for deliveries. If demand for goods movement in an area is too low, there is little reason for businesses to establish a microhub for urban deliveries since the level of demand will not justify its operational costs.</p>	<ul style="list-style-type: none"> • Daily/weekly volume of deliveries • Number of business units • Number of retailers • Total retail space
<p>Suitability</p> <p>Suitability is determined by the physical attributes of a service area that make it more favourable to microhub operations. Areas that are best suited for microhub operations are difficult to access by larger delivery vehicles (either due to limited road space, high congestion levels, or vehicle restrictions), have limited space available for large delivery vehicles to stop along the curbside, and prioritize infrastructure designed for pedestrians, cyclists, and transit users. Together, these characteristics make it difficult to conduct deliveries with a conventional package car, and make conditions more suitable for alternative delivery modes, such as cargo cycles, deploying from microhub locations.</p>	<ul style="list-style-type: none"> • Existence and occupancy of loading bays • Number of km of bus lanes, pedestrian streets, bicycle lanes • Average or minimum speed of daily traffic • Traffic volumes on roads • Restrictions on delivery hours
<p>Feasibility</p> <p>Feasibility refers to the institutional and economic context necessary to support micro-consolidation operations. Feasibility increases when relevant stakeholders are involved in the design and operation of a microhub, including business representatives and government actors. Incentives or financial supports provided by governments are often necessary to offset the high real estate costs of microhub spaces. Feasibility also depends on the effective integration and consideration of microhub operations in broader transportation plans and policies.</p>	<ul style="list-style-type: none"> • Involvement of stakeholders (public, private businesses, including retail stores, other organizations associations) • Level of public funding available • Public infrastructure provided • Acceptability of microhub concept

1. Milena Janjevic and Alassane Balle Ndiaye, "Development and Application of a Transferability Framework for Micro-consolidation Schemes in Urban Freight Transport," *Procedia - Social and Behavioral Sciences* 125 (2014), 292.

How can municipalities facilitate microhubs in urban areas?

Based on North American and European examples of microhubs, governments have an integral role to play in helping establish logistics facilities, including microhubs, to facilitate more efficient last-mile deliveries. Some ways that municipalities can help realize the different conditions needed to successfully implement microhubs are listed here.

Relevance

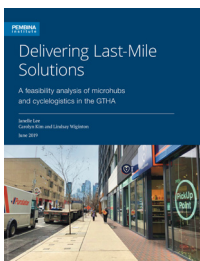
- Consider logistics facilities such as microhubs in land use planning (e.g., official plans and zoning bylaws) and transportation plans and strategies (e.g., freight and goods movement, transportation master plans)
- Explore opportunities to pilot and establish microhubs in dense urban areas or zones with high truck volumes
- Establish higher residential and commercial densities through land use plans and zoning bylaws
- Modernize land use and transportation planning and/or economic development strategies to promote the use of efficient and sustainable urban freight practices including microhub operations

Suitability

- Invest in expanding and improving infrastructure and policies (e.g., low emission zones) that prioritize the use of zero- or low- emission delivery vehicles that deploy from microhubs

Feasibility

- Establish partnerships with relevant businesses and organizations to identify and establish microhub locations
- Provide financial supports to offset the high real estate cost of microhub spaces
- Explore policies aimed at increasing the supply of zero-emission commercial delivery vehicles in the Canadian market (e.g., zero-emission vehicle mandates)
- Explore policies and incentives to encourage uptake of zero- or low-emission delivery vehicles (e.g., purchase incentives, government procurement policies)



For more information and detailed references, see:

Delivering Last-Mile Solutions
www.pembina.org/pub/delivering-last-mile-solutions

Other related publications

Modernizing Urban Freight Deliveries with Microhubs
www.pembina.org/pub/modernizing-urban-freight-deliveries

Cyclelogistics: Opportunities for moving goods by bicycle in Toronto
www.pembina.org/pub/cyclelogistics



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