

### Infrastructure Enhancement for City Transit Facilities (Fare Gates) Transit Research Findings

#### Summary

- Some transit systems in North America are considering fare gates as a potential tool to address safety and security issues.
  - Several transit services in North America, including Philadelphia, Los Angeles and San Francisco/Oakland, are piloting different types of fare gates, in part, to explore if they can help as a safety and security measure.
- It is difficult to assess the impact of fare gates independently of broader safety and security strategies deployed by different transit services.
- Despite a current lack of evidence linking fare gates to decreases in safety and security incidents, some evidence suggests that fare gates improve riders' perceptions of safety and fairness. These perceptions are important because they influence future transit use and can lead to increased ridership.
- Fare gates have been shown to reduce the rate of fare evasion. This has been the primary driver of fare gate use.
- Fare gates create real and/or perceived barriers to accessibility for those with vision loss, wheelchairs or other mobility devices, strollers, or bikes. Improvements to fare gate design and related technology have enhanced accessibility to partially mitigate these challenges.
- Transit systems with fare gates typically rely on staff to assist riders who may need support and to monitor for unauthorized access to fare-paid zones. These staff members ensure that the system operates smoothly, supporting riders with mobility limitations, helping with fare validation, and enhancing overall security by deterring fare evasion and other unauthorized activities.
- Transitioning to a hybrid or fully closed fare gate system in transit systems initially built to be open can be costly due to the structural and operational challenges involved. Extensive modifications pose technical risks and alter the initial design of stations meant to integrate seamlessly with the urban environment.
- In cities that have not pursued fare gates, such as Calgary, alternative approaches to safety focus on increased staff presence, including Transit

## Attachment 2

Peace Officer and station ambassador/attendant roles, as well as community outreach support and infrastructure improvements.

### Research Approach

- Online research was conducted to identify transit agencies with fare gates, no fare gates, or a hybrid system.
- Interviews were conducted with sector professionals in transit services in North America (see Figure 1 below).
- The research and interviews sought information related to how fare gates improve safety in transit spaces, impacts on fare evasion, and customer experiences.

### List of Transit Services Researched

City	Agency	LRT Network Fare System
Calgary	Calgary Transit	Open
Vancouver	Translink (SkyTrain)	Closed
Boston	Massachusetts Bay Transportation Authority (MBTA)	Hybrid
San Francisco / Oakland	Bay Area Rapid Transit (BART)	Hybrid <sup>1</sup>
Montreal	Société de transport de Montréal	Closed
Toronto	Toronto Transit Commission (TTC)	Closed
Los Angeles	LA Metro	Hybrid
Seattle	Sound Transit	Open
Philadelphia	Southeastern Pennsylvania Transportation Authority (SEPTA)	Hybrid
Frankfurt	Rhein-Main-Verkehrsverbund (RMV)	Open

### Key Research Insights

#### Safety and Security

- Assessing the isolated impact of fare gates on transit safety and security presents challenges. Transit services typically deploy a range of measures, including increased surveillance, enhanced lighting, presence of security personnel and public awareness campaigns, which collectively contribute to safety and security enhancements. Consequently, isolating the specific

<sup>1</sup> BART is transitioning to a closed transit system with work to be completed by the end of 2025.

## Attachment 2

- effects of fare gates from other measures that have been implemented is difficult to assess between multiple transit systems.
- The Canadian Urban Transit Association's Transit Safety Taskforce was assembled to develop national recommendations for improving transit safety and security, reducing disorder and crime so transit is a safe transportation mode for all Canadians. The final report included recommendations focused on rider safety, staff safety, housing and supports, substance use and mental health; fare gates were not included in the recommendations.<sup>2</sup>
  - In 2023, Calgary assessed the possibility of transitioning its LRT network to a closed system, but chose not to proceed with this transition due to the scale of the modifications required to most of the existing stations.<sup>3</sup> As an alternative, an enhanced staffing model was proposed which included:
    - Adding more Downtown Outreach Addictions Partnership (DOAP) Transit and Community Outreach Transit Teams (similar to Edmonton's Community Outreach Transit Teams).
    - Creating a combined transit safety team, with dedicated resources from the Calgary Police Service.
    - Expanding the Transit Peace Officer Team to 185 officers, allowing Calgary to field 45 officers at any given time across the network.<sup>4</sup> (to be implemented by Q3 2024).
    - Expanding the Calgary Transit Ambassador Program to make staff more visible.
    - Building new hubs for Customer/Safety deployment at certain stations. These hubs are to support the work of different staff groups, including Transit Peace Officers, DOAP Transit/Community Outreach Teams, the Calgary Police Service, and the Ambassador Program<sup>5</sup>.
  - There is some evidence from other transit agencies that fare gates improve rider perceptions of safety and perceptions of fairness. Translink, in the greater Vancouver area, has been partially motivated by improved perceptions of safety and fairness in their installation of fare gates. TransLink staff believe that the enhanced perception of fairness and order within the transit environment contributes to an improved sense of safety among riders<sup>6</sup>. Bay Area Rapid Transit (BART) also reported a positive shift in rider

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<sup>2</sup> CUTA, "[Prioritizing Safety on Public Transit Recommendations for transit agencies, partnering organizations and all levels of government](#)" April 24, 2023

<sup>3</sup> City of Calgary. Ibid.

<sup>4</sup> City of Calgary, [RouteAhead Annual Status Update 2023](#)

<sup>5</sup> City of Calgary. Ibid.

<sup>6</sup> City of Calgary. [Assessing a Closed System as Part of The City of Calgary Transit Safety Strategy](#). Calgary: City of Calgary, 2023

perceptions after fare gates were implemented which they attribute to the decrease in non-paying riders.<sup>7</sup>

### **Fare Evasion**

- Research suggests fare gates can reduce (but not fully eliminate) fare evasion, particularly when paired with simple and convenient payment methods.<sup>8,9</sup> This is the primary motivation for the installation of fare gates at transit properties including a recent fare gate pilot by the Southeastern Pennsylvania Transportation Authority (SEPTA) in Philadelphia and surrounding areas. In this instance, a 3-month pilot project was recently completed with plans to expand fare gates to additional stations.<sup>10</sup>

### **Accessibility**

- Fare gates create real and/or perceived barriers around accessibility for those with vision loss, with wheelchairs or other mobility devices, those using strollers or bikes, etc. Improvements to fare gate design and related technology have shown improvements in accessibility but ultimately, a fare gate is an additional step in the rider's journey.
- Most fare gates installations have been installed to include an accessibility gate that is typically wider than the rest of the gates. The American Disabilities Act (ADA) provides an accessibility standard for many North American based manufacturers.
- When TransLink, in the greater Vancouver area, introduced fare gates, there was criticism of their initial accessibility provisions which included a reliance on electronic fare payment cards, and requiring individuals to call-ahead, so a station attendant could meet them at the fare gate to manually allow them through. TransLink has introduced a hands-free Radio Frequency Identification (RFID) fare gate system. This \$9 million initiative enables fare gates to automatically open for individuals holding RFID cards.<sup>11</sup>

### **Fare Revenue Impacts**

- Fare gates have shown to increase revenue from increased fare payment; however, the extent to which revenue is anticipated to grow is transit agency specific and depends on the extent of fare evasion prior to fare gate installation. Translink reported an 8.1 per cent increase in revenue attributed

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<sup>7</sup> BART, "[New Fare Gates & Station Hardening](#)", Bay Area Rapid Transit

<sup>8</sup> Cho, Jessica. "[Towards an equitable approach to tackling the fare evasion problem: a scoping literature review and case study analysis](#)." PhD diss., Toronto Metropolitan University, 2020

<sup>9</sup> Barabino, B., Lai, C. & Olivo, A. [Fare evasion in public transport systems: a review of the literature](#). Public Transport 12, 27–88 (2020). <https://doi.org/10.1007/s12469-019-00225-w>

<sup>10</sup> Mass Transit. "[Conduent Transportation, SEPTA Launch 3D Fare Gate Solution Pilot at 69th Street Station](#)." Mass Transit

<sup>11</sup> Translink, "[Universal Fare Gate Access Program launches](#)" January 23, 2018

to the installation of fare gates across their SkyTrain service, but this also coincided with a period of increased service, ridership, and the opening of the Evergreen Extension on the SkyTrain network.

### **Staffing**

- Fare gates are often accompanied by staff of different types which can vary based on station size, rider volumes, and budget considerations. Staffing is often higher during peak travel periods. Staff are typically available to assist riders with tapping fare cards, answering questions, and providing directions, but can also monitor fare gates for malfunction, improper use, or unauthorized access. They typically do not perform a policing function and would refer any safety and security incidents to a centralized dispatch area. Translink has recently expanded their efforts to combat fare evasion with 24 additional Community Safety Officers (CSOs), similar to the City of Edmonton's Transit Peace Officers (TPOs).<sup>12</sup>

### **Transition from Open to Hybrid or Closed Systems**

- In transit systems built initially to be open with no fare gates, transitioning to a hybrid or fully closed fare gates system can be costly due to the structural and operational challenges that would be required. Extensive modifications to existing infrastructure poses technical risks, and could change the function and aesthetic of stations meant to integrate seamlessly with the urban environment.

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<sup>12</sup> Chan, Kenneth., "[TransLink to create new measures to reduce fare evasion](#)" *Daily Hive*, June 27, 2024