

# HEALTH BENEFITS OF TRANSIT INVESTMENT: *POLICY BRIEF*

UBC's Health & Community Design Lab |

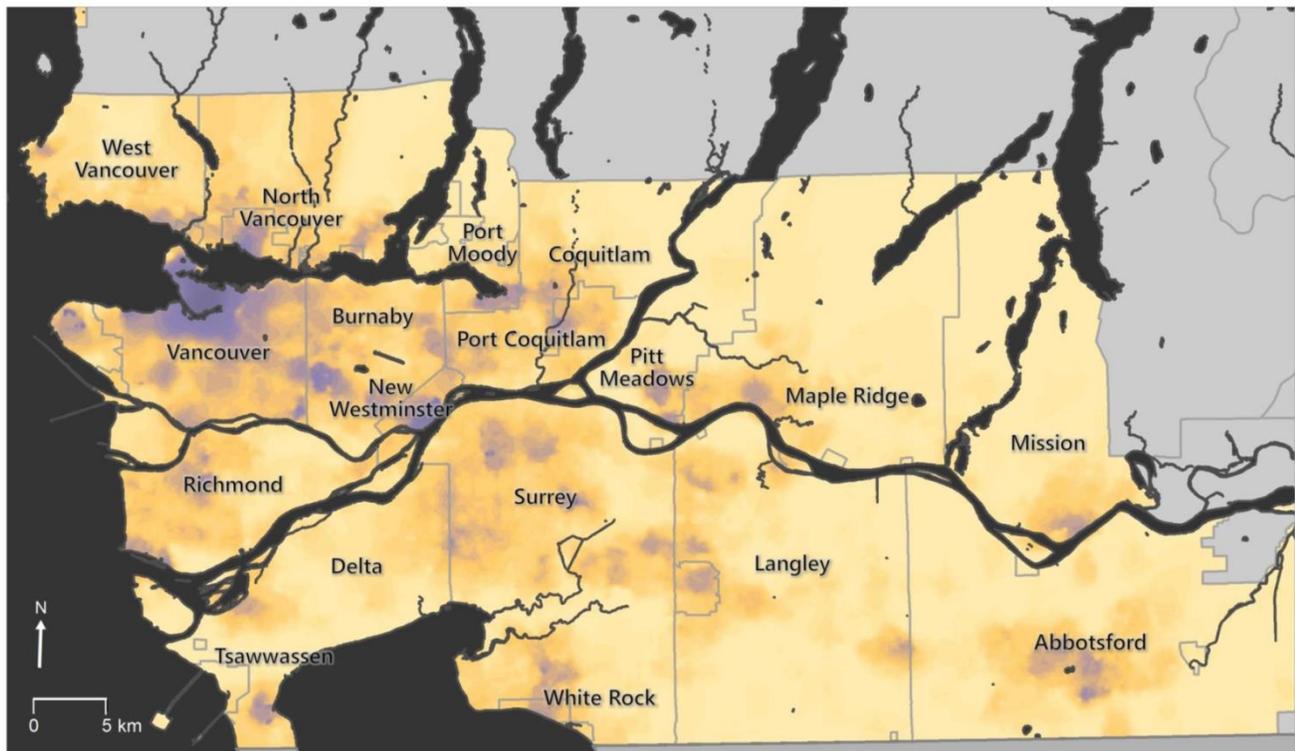
Lawrence D. Frank & Suzanne E. Kershaw

*Metro Vancouver is at a critical juncture: public transportation service is deteriorating while the population is expected to grow by another million residents by 2040. Population growth, an aging population, severe traffic congestion, and rising health care costs from physical inactivity are converging to make transportation investment a high priority for Metro Vancouver. Below we examine how investing in transit improves our health which can reduce health care costs, and can help meet the growing unmet demand for walkable environments.*

## Unmet Demand for Transit Oriented Development in Metro Vancouver

Existing neighbourhoods, especially those found in the Outer areas of Metro Vancouver, are not meeting the needs of current residents. A recent survey of 1,223 people found that **1 out of every 4** residents in auto-oriented neighbourhoods in outer Metro Vancouver would prefer to live in a transit supported walkable environment.<sup>1</sup> **Sixty percent** of survey participants stated a willingness to trade off features of auto-oriented environments for walkable communities well-served by public transit.

The following map illustrates the relatively limited amount of our region that is currently transit supportive and walkable. Creating new walkable communities, like those planned in Surrey, will require significant investments in transit.



**Transit Supportive Areas**



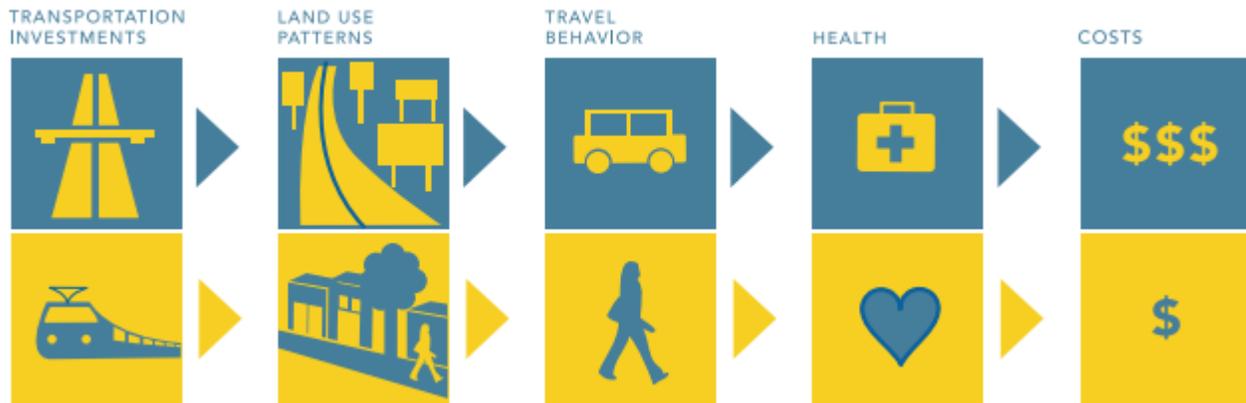
The proposed projects will provide access to frequent transit for **70%** of Metro Vancouver residents and save **20–30 minutes per day** on some of the region's most congested corridors.

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## Physical Activity, Public Health, Sedentary Lifestyles



Source: *The Hidden Health Costs of Transportation*

### *Building Transit Increases Physical Activity, Reduces Vehicle Use and CO<sub>2</sub> Emissions*

- A recent study in Los Angeles evaluated the impact of the new Exposition Line light rail stations on travel patterns, activity levels, and CO<sub>2</sub> emissions.<sup>2</sup> It found that people living within 1/2-mile of a rail station:
  - **Reduced their daily vehicle travel by 10-12 miles**
  - **Reduced CO<sub>2</sub> emissions by 30%**
  - **Experienced an 8-10 minute increase in physical activity** after station opening (for those least physically active)
- A Montreal study found that transit users achieved **25% of the daily recommended level of physical activity** from transit use.<sup>3</sup>
- A recent study in Salt Lake City, Utah found a **19% increase in the number of participants who rode rail** after the opening of a new rail line.<sup>4</sup> Rail use was also associated with increased land use mix and residential density.<sup>5</sup>
- Transit users accumulate anywhere between **12 to 18 minutes of additional walking** per day compared to non-transit users.<sup>6-8</sup>
- The odds of meeting the physical activity recommendation of at least 30 minutes of moderate activity per day was **more than twice as high for transit users** than non-users in a study of Atlanta area residents.<sup>9</sup>

### *Transit Makes You Thin: Driving Makes You Fat*

- A study in Charlotte North Carolina found that transit users were an average of **6.5 pounds lighter** than non-users and **81 percent less likely to become obese** over time.<sup>10</sup>
- An Atlanta area study showed that each additional hour in a car was associated with a 6 percent increase in obesity and each additional kilometre walked with a **5 percent reduction in obesity**.<sup>11</sup>

**Facts on Health and Transit in the Region:** By 2040, 25% of the area's population will be over 65 years old, resulting in increased financial burden on the province's healthcare system.

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## *Transit improves health, reduces health care costs*

- Studies have shown that compact, walkable, and transit-oriented community design is associated with **improved health outcomes** including reduced blood pressure, cardiovascular disease, and diabetes.<sup>12-14</sup>
- A recent report by the American Public Health Association documented the impact of transportation investments on health costs related to physical inactivity, obesity, air pollution, and traffic safety.<sup>15</sup>
- A study in Charlotte, NC, forecasted that the City's investment in a new light rail line would result in a 9-year **public health cost savings of \$12.6 million** due to reduced obesity-related morbidities.<sup>16</sup>

## **Air Quality & Respiratory Health**

### *Increased transit investment can contribute to better air quality*

- Air pollution is associated with respiratory ailments, hypertension, cardiovascular disease, and diabetes.<sup>17-20</sup>
- A recent study found that increased investment in public transit could **reduce transportation-related emissions by 40%** by 2050.<sup>21</sup>

## **Traveling Safely**

### *Taking transit is safer than driving and can reduce traffic-related fatalities*

- Crash risk per kilometer of travel is substantially lower for **all forms of public transit** as compared to passenger car or truck use.<sup>22</sup>
- Based on three decades of data from 100 U.S. cities, a **10% increase in the percentage of passenger-miles of travel using transit** was associated with a **1.5% reduction in traffic-related fatalities**.<sup>23</sup>

## **Efficient Transit Draws Riders**

### *Reducing Travel Time on Transit Increases Ridership*

- A Seattle study found that a modest **10% reduction in travel time on transit** was associated with a 3.9% increase in transit use for work and a 2.3% increase for non-work.<sup>24</sup>

### *People living in walkable neighbourhoods use public transit more frequently*

- Metro Vancouver adults living in neighbourhoods with the highest residential and commercial densities, street connectivity, and land use mix were nearly **twice as likely to make a public transit trip** in a usual week, compared to those living in the least walkable areas of Metro Vancouver after controlling for socio-demographics, vehicle access, and residential preferences.<sup>25</sup>
- Another Metro Vancouver study found youth of high school age living in the most walkable neighbourhoods are almost **8 times more likely to make a home-based transit trip to school** than youth in the least walkable areas.<sup>26</sup>

**Facts on Health and Transit in the Region:** Metro Vancouver has **680 deaths annually** attributable to air pollution.<sup>27</sup> Health complications related to air pollution cost the BC economy approximately **\$1 billion annually**.<sup>28</sup>

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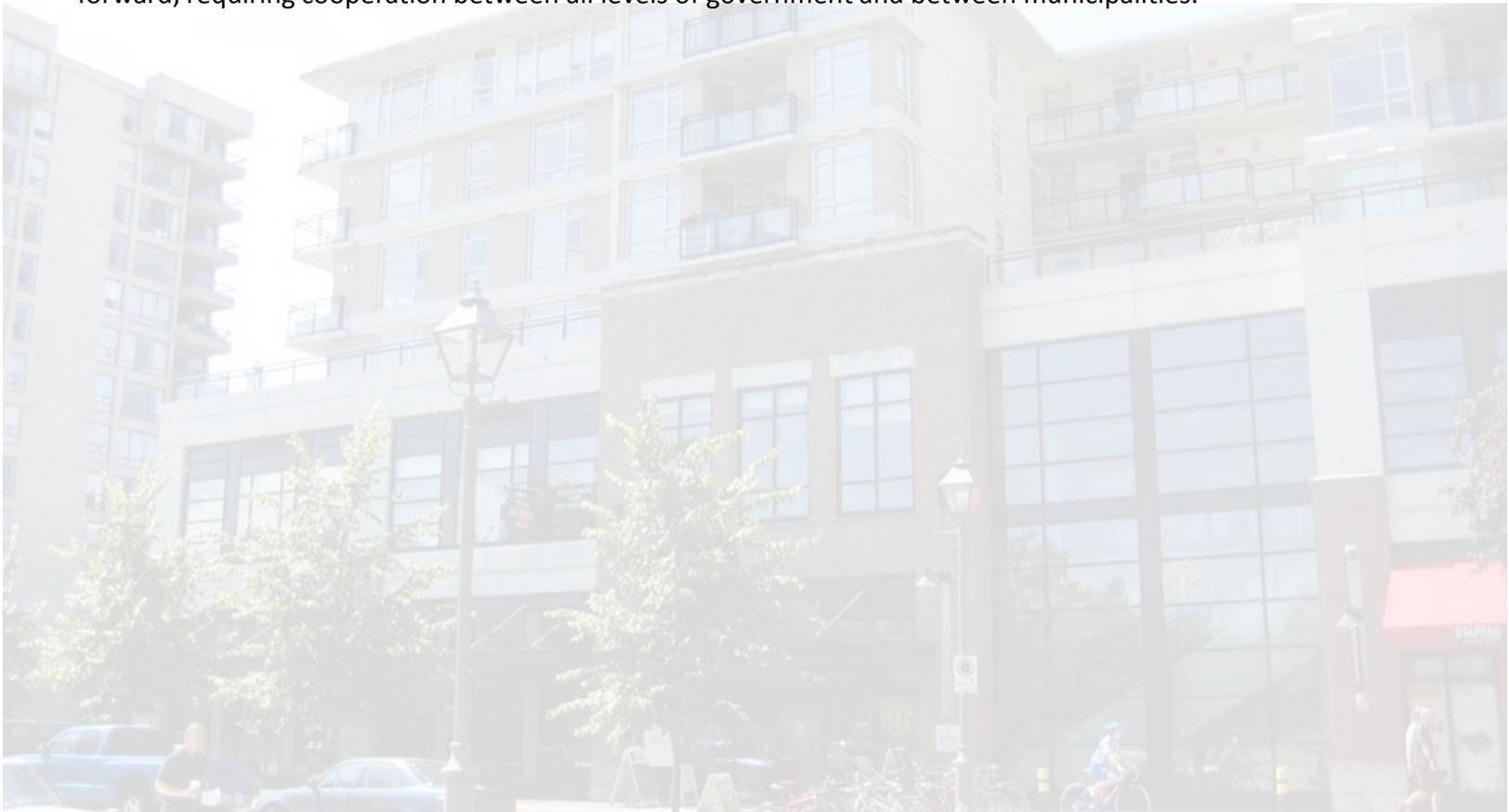
## Creating Transit Oriented - Walkable Communities

Transit infrastructure coupled with sustainable, walkable communities work synergistically to create the environment needed to promote active modes of travel and decrease vehicle dependence. Implementing a fully built-out transit network across the Metro Vancouver region would support healthy communities that make transit, walking, and cycling a viable option for more trips, while providing many economic, health, environmental, and social benefits to both **transit and non-transit users**, including reduced traffic congestion and travel times, better air quality, fewer traffic-related injuries, and improved population health.

Physical activity is a key modifiable behaviour that can reduce rates of overweight and obesity and incidence of chronic disease. Designing communities that allow people to incorporate physical activity into work, school, and other trips is one way to increase low rates of physical activity and reduce escalating health care costs.

With a growing population in the Metro Vancouver area, emphasis on creating safe physical environments that promote physical activity and social interaction will allow residents to maintain a high standard of living, and allow an increasing number of older residents to remain active and “age in place”, lessening the burden on the public health care system.

A “complete streets” approach that prioritizes active modes of travel for all ages and abilities, along with streets designed for safe vehicle use, will be an important focus for land use and transportation planning moving forward, requiring cooperation between all levels of government and between municipalities.



Fifty-nine percent of BC residents are now classified as overweight or obese,<sup>29</sup> and over the past 10 years, diabetes rates have risen by 70% across Canada.<sup>30</sup>

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