

Mission Statement

In 2015, the United Nations established 17 Sustainable Development Goals to promote peace and prosperity for people and the planet. Central to this vision is Goal 11: making cities and human settlements inclusive, safe, resilient, and sustainable. For growing metropolitan regions, a cornerstone of this sustainability is equitable access to public transportation. Transit connects individuals to essential services, employment, and their wider community. It serves as a critical upstream factor in overall societal well-being. However, as Metro Vancouver continues to expand, the distribution of transit infrastructure remains uneven. This creates "transit deserts" where populations with the highest demand often face the lowest accessibility.

To accurately capture and address this disparity, our approach relies on strict quantitative evidence. Our project models transit demand at the Dissemination Area (DA) level by analyzing key demographic vulnerabilities. We evaluate the percentage of low-income individuals after tax, recent immigrants from the last five years, seniors over 65, and youth under 14. By aggregating these factors into standardized demand z-scores and comparing them against access z-scores derived from bus departures within 400 meters and SkyTrain or SeaBus departures within 800 meters of a DA centroid, we can mathematically identify and classify transit deserts across quantiles.

In support of a more equitable and connected region, our team has developed an interactive application to help Metro Vancouver residents and policymakers visualize and resolve these transit gaps. The app allows users to explore existing spatial patterns and actively test solutions by dragging and dropping new transit infrastructure like bus stops, RapidBus lines, or SkyTrain stations directly onto the map. The platform instantly calculates the real-world impact. It displays exactly how many Dissemination Areas and individual residents are pulled out of transit desert status by the proposed additions. By providing an accessible and data-driven tool, we aim to raise public awareness of transit inequity and equip decision-makers with the precise insights necessary to advocate for preventative, high-impact infrastructure investments.

App Characteristics

- **Discover Transit Equity and Sustainability** Move beyond basic service maps to uncover the real mobility gaps in the city. By calculating transit supply (departures, stops) and demographic demand (income, age, recent immigrants).
- **Simulate Green Infrastructure** Test sustainable solutions before a single dollar is spent. Our interactive web app allows planners to drop a pin on the map and visualize the immediate impact of a new rapid transit route or bus exchange. The application instantly updates local transit scores based on a formula.
- **Explore Transit Access and Demand** Dive into the complex spatial relationship between the people and the network. Users visually dissect the underlying data, comparing raw infrastructure capacity (like daily bus frequencies and SkyTrain proximity) directly against the specific community demographics that rely on public transit the most.

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- **Help Connect Communities** Shift the urban planning focus from simply moving vehicles to genuinely connecting people. Explore regions that would benefit from increased services across the Vancouver metropolitan region.