Transit Score® Methodology

Introduction

Transit Score is a patent-pending measure of how well a location is served by public transit on a scale from 0 to 100.

The Transit Score algorithm calculates a score for a specific point by summing the relative "usefulness" of nearby routes. We define usefulness as the distance to the nearest stop on the route, the frequency of the route, and type of route.

Transit Score works in any city where the transit agencies publish data in the GTFS format. The list of cities where we have Transit Score is available in this spreadsheet. The full list of cities where we have some GTFS data is available on CityGoRound.org.

If you'd like to use Transit Score in your research, see our research pages.

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Calculating the Raw Transit Score

To calculate a raw Transit Score, we sum the value of all of the nearby routes. The value of a route is defined as the service level (frequency per week) multiplied by the mode weight (heavy/light rail is weighted 2X, ferry/cable car/other are 1.5X, and bus is 1X) multiplied by a distance penalty. The distance penalty calculates the distance to the nearest stop on a route and then uses the same distance decay function as the Walk Score algorithm.

Normalizing Scores from 0 to 100

Since any measure of transit infrastructure (number of stops, number of weekly trips, etc.) will have its own unique range, it is necessary to normalize the raw Transit Score to generate a Transit Score from 0 to 100.

The amount of transit infrastructure can vary by several orders of magnitude. Scales for measuring things that have an extremely large range of normal values (sound volume, earthquake intensity, etc) are typically logarithmic - a bus stop in a small town might see three trips a day, whereas downtown Manhattan might see tens of thousands. If Manhattan had a Transit Score of 100, then on a linear scale a small town's downtown might have a Transit Score of 0.01, whereas a logarithmic score might rate Manhattan as 100 and a small town as 10. The logarithmic score matches a rider's experience better: the added utility of one additional bus in a small town may exceed the addition of 10 new routes in downtown Manhattan.

In order to normalize from 0 to 100, we need to pick a "perfect score" location. To do this, we averaged the Transit Score of the center of a five U.S. cities where we had full transit data (San

Francisco, Chicago, Boston, Portland, and Washington, D.C.) to create a canonical 100 Transit Score.